

Ms 5103/20-30. Eötvös Loránd jezsuita. Magyarság

11 kötet dor.

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19. Fev 17. 52



$\mu_6 + \mu_c$

Ms 5104/20

$\varphi$	$\Sigma y_{\text{und}}$ $\mu_6$	$\Sigma y_{\text{und}}$ $\mu_c$	$\Sigma y_{\text{und}}$ $\mu_6 + \mu_c$	$\Sigma y_{\text{und}}$ $\mu_6$	$\Sigma y_{\text{und}}$ $\mu_c$	$\Sigma y_{\text{und}}$ $\mu_6 + \mu_c$	$\Sigma y_{\text{und}}$ $\mu_6 + \mu_c$	$\Sigma y_{\text{und}}$ $\mu_c$
0	+60,17	+11,89	+72,06	+58,47	4,31	62,78	+67,42	+8,10
20	+59,28	+20,47	+79,85	+62,97	+19,16	+82,13	+81,00	+19,82
40	+58,06	+33,41	+91,47	+58,79	+45,73	+104,52	+98,00	+39,57
60	+18,77	+28,83	+47,60	+36,08	+61,58	+97,66	+92,63	+50,20
összesen 409	+59,2	+21,9		+60,1	+22,1		$\frac{229,05}{4} = +57,26$	$+84,7 = \mu_c + \mu_6$

összesen  $\mu_6 = 59,7$   $\mu_c = +22,5$

$\mu_a$

$\varphi$	$\Sigma X$ $\mu_a$	$\Sigma X$ $\mu_a$	$\Sigma X$ $\mu_a$
0	+336,75	<del>336,75</del>	+336,75
20	+322,55	341,02	+322,28
40	+300,27	+320,11	+310,19
60	+286,66	+306,87	+296,77
összesen 409	320,2	320,6	$\frac{1275,99}{4} = 318,9 = \mu_a$

összesen  $\mu_a = 325,4$

$e + g$

$\varphi$	$\Sigma X_{\text{und}}$ $e$	$\Sigma X_{\text{und}}$ $g$	$\Sigma X_{\text{und}}$ $e + g$	$\Sigma X_{\text{und}}$ $e$	$\Sigma X_{\text{und}}$ $g$	$\Sigma X_{\text{und}}$ $e + g$	$\Sigma X_{\text{und}}$ $e$	$\Sigma X_{\text{und}}$ $g$	$\Sigma X_{\text{und}}$ $e + g$
0	-14,44	-42,00	-56,44	<del>-14,44</del>					
20	-16,46	-51,59	-68,05	-21,77	-36,96	-58,73	-20,78	-39,30	-60,08
40	+6,23	-143,13	-136,90	-13,73	-48,59	-62,32	-13,78	-46,38	-60,16
60	-24,77	-21,28	-46,05	-6,29	-44,83	-51,12	-1,22	-66,60	-67,82
			$\frac{-307,45}{4} = -76,9$			$\frac{172,17}{4} = -43,04$			$\frac{188,06}{4} = -47,01$

$e + g = -76,9$   $e = -17,8$   $g = -42,8$

összesen  $e = -17,8$   $g = -42,8$

összesen  $e = -17,6$   $g = -42,8$



$\varphi$	$\sum X_{\text{unrel}}$ $-\sum X_{\text{unrel}}$	$\sum X_{\text{unrel}}$ $-\sum X_{\text{unrel}}$	$i+h$	$\sum X_{\text{unrel}}$ $i$	$\sum X_{\text{unrel}}$ $i$	$\sum X_{\text{unrel}}$ $i$	$\sum X_{\text{unrel}}$ $i$
0	+32,73			-2,72	-26,66	-2,56	-30,18
20	+22,73	-41,70	-8,97	-7,48	-23,54	-10,83	-23,44
40	+6,06	-25,94	-25,88	-20,77	-20,44	-31,73	-19,14
60	-27,90	-22,12	-50,02	-32,38	-24,56	-40,07	-19,66

$f = \frac{-89,176}{5} = -29,9$   
 $f = -24,7$   
 $f = -27,6$   
 $f = -26,2$   
 $f = -25,1$   
 $f = -23,1$   
 $f = -24,1$

$2h+i$   $\sum (X-X')$   $\sum 703,84$

$\varphi$	$2h+i$	$\sum (X-X')$
0	26,0	-49,88
20	-28,03	-21,64
40	-9,29	-147,91
60	+16,22	-14,57

1)  $\lambda = 160$   
 $\varphi = -20$   
 $D = 0$   
 $\lambda = 160$   
 $X_{20} = +245$   $Y_{20} = +55$   
 $X_{40} = +228$   $Y_{40} = +52$   
 $X_{20} = +287$   $Y_{20} = +54$   
Werte  
 $X_{20} = 290$   $Y_{20} = 50$   
 $X_{20} = +297$   $Y_{20} = +56$   
Heimweg

2)  $\lambda = -120$   
 $\varphi = +20$   
 $D = -40$   
 $\lambda = -120$   
 $X_{10} = +300$   $Y_{10} = +53$   
 $X_{10} = +229$   $Y_{10} = +73$   
 $X_{10} = +279$   $Y_{10} = +63$   
Werte  
 $X = 289$   $Y = +67$   
Heimweg

3)  $\lambda = -80$   
 $\varphi = -50$   
 $D = 0$   
 $\lambda = -90$   
 $X_{40} = +267$   $Y_{40} = +97$   
 $X_{60} = +220$   $Y_{60} = +123$   
 $X_{20} = +244$   $Y_{20} = +110$   
Werte  
 $X_{20} = +252$   $Y_{20} = +110$   
Heimweg

4)  $\lambda = +70$   
 $\varphi = +10$   
 $D = -65$   
 $\lambda = +70$   
 $X_{0} = +241$   $Y_{0} = -8$   
 $X_{20} = +372$   $Y_{20} = +6$   
 $X_{20} = +357$   $Y_{20} = -1$   
Werte  
 $X_{20} = 364$   $Y_{20} = -1$   
Heimweg

Korrekturen + Y-Korrektur

Heimweg



$$(\mu_c + \mu_b), (e + g), \mu_a, f.$$

$$X = -\mu_a \cos \varphi + (\mu_b + \mu_c) \sin \varphi \sin \lambda - \mu_c \sin \varphi (\sin \lambda + \cos \lambda) \\ = h \sin 2\varphi + (e + g) \cos 2\varphi \cos \lambda - e \cos 2\varphi (\sin \lambda + \cos \lambda) - \frac{1}{2} f \sin 2\varphi \sin \lambda - i \sin \varphi \cos \lambda$$

$$Y = -(\mu_b + \mu_c) \cos \lambda - \mu_c (\sin \lambda - \cos \lambda) \\ - (e + g) \sin \varphi \sin \lambda + e \sin \varphi (\sin \lambda - \cos \lambda) - i \cos \varphi \sin \lambda + f \cos \varphi \cos \lambda.$$

Képezzük  $X \sin \delta + Y \cos \delta$

1) 2) 3) 4) példákra

$$\text{tíves} \quad \mu_c + \mu_b = +84,7 \\ e + g = -60,4 \\ \mu_a = -319,0 \\ f = -24,1$$

1) példára

$$X_t - \xi = +297 - \xi = +296,87 - 0,299 \mu_c + 0,866 h + 0,299 e + 0,766 i \\ Y_t - \eta = +56 - \eta = +53,31 - 1,282 \mu_c - 0,641 e + 0,557 i \\ \text{tíves} \quad \xi \cos \delta + \eta \sin \delta$$

$$0 = -0,299 \mu_c + 0,866 h + 0,299 e + 0,766 i \quad \dots 1)$$

2) példára

$$X_t - \xi = 289 - \xi = +293,71 + 0,683 \mu_c - 0,866 h + 0,683 e - 0,217 i \\ Y_t - \eta = 67 - \eta = +78,94 + 0,366 \mu_c - 0,183 e - 0,750 i$$

$$+4,07 = +0,288 \mu_c - 0,663 h + 0,641 e + 0,316 i \quad \dots 2)$$

$$3) \text{ példára} \quad Y_t - \eta = 110 - \eta = 45,4 + 1,159 \mu_c + 0,888 e - 0,220 i$$

$$X_t - \xi = +258 - \xi = +283,44 - 0,453 \mu_c + 0,985 h - 0,103 e + 0,03 i$$

$$-25,44 = -0,453 \mu_c + 0,985 h - 0,103 e + 0,03 i \quad \dots 3)$$

$$4) \text{ példára} \quad X_t - \xi = 364 - \xi = 335,14 - 0,223 \mu_c - 0,342 h - 1,205 e - 0,04 i \\ Y_t - \eta = -1 - \eta = -0,91 - 0,598 \mu_c + 0,104 e - 0,633 i$$

$$+12,196 = +0,448 \mu_c - 0,145 h - 0,603 e + 0,557 i \quad \dots 4)$$



$\varphi = 0$  na a mővel meglege nagy az  $i = 1$ ;  $\dots = 57,296$

$$\frac{\partial X_t}{\partial \varphi} \cos \delta + \frac{\partial X_t}{\partial \lambda} \sin \delta = (+\mu_b \sin \delta - \mu_c \cos \delta - 2h - f \sin \delta - 2i \cos \delta) \cos \delta \quad 1)$$

$$- (e \cos \delta + g \sin \delta) \sin \delta$$

$$\frac{\partial Y_t}{\partial \varphi} \cos \delta + \frac{\partial Y_t}{\partial \lambda} \sin \delta = (-g \sin \delta - e \cos \delta) \cos \delta + (-\mu_c \cos \delta + \mu_b \sin \delta - 2i \cos \delta - 2f \sin \delta) \sin \delta \quad 2)$$

$$\frac{\partial Z_t}{\partial \varphi} \cos \delta + \frac{\partial Z_t}{\partial \lambda} \sin \delta = (-2\mu_a - 3e \sin \delta + 3g \cos \delta) \cos \delta +$$

$$+ (-2\mu_b \cos \delta - 2\mu_c \sin \delta + 3f \cos \delta - 3i \sin \delta) \sin \delta \quad 3)$$

$$X = H \cos \delta \quad Y = H \sin \delta \quad Z = H \tan i$$

$$\frac{\partial X}{\partial \varphi} = \cos \delta \frac{\partial H}{\partial \varphi} - H \sin \delta \frac{\partial \delta}{\partial \varphi}$$

$$\frac{\partial X}{\partial \lambda} = \cos \delta \frac{\partial H}{\partial \lambda} - H \sin \delta \frac{\partial \delta}{\partial \lambda}$$

$$\frac{\partial Y}{\partial \varphi} = \sin \delta \frac{\partial H}{\partial \varphi} + H \cos \delta \frac{\partial \delta}{\partial \varphi}$$

$$\frac{\partial Y}{\partial \lambda} = \sin \delta \frac{\partial H}{\partial \lambda} + H \cos \delta \frac{\partial \delta}{\partial \lambda}$$

$$\frac{\partial Z}{\partial \varphi} = H \frac{1}{\cos^2 i} \frac{\partial i}{\partial \varphi} + \tan i \frac{\partial H}{\partial \varphi}$$

$$\frac{\partial Z}{\partial \lambda} = H \frac{1}{\cos^2 i} \frac{\partial i}{\partial \lambda} + \tan i \frac{\partial H}{\partial \lambda}$$

$\varphi = 0 \quad \lambda = +100^\circ \quad H = 376$

$\frac{\partial H}{\partial \varphi} = +114,6$

$\frac{\partial H}{\partial \lambda} = +47,56$

$\delta = 2^\circ 20'$

$\frac{\partial \delta}{\partial \varphi} = \pm 0,077$

$\frac{\partial \delta}{\partial \lambda} = +0,031$

$i = -17^\circ$

$\frac{\partial i}{\partial \varphi} = +2,000$

$\frac{\partial i}{\partial \lambda} = +0,208$

$X_t = 375,6$

$\frac{\partial X}{\partial \varphi} = +113,29$

$\frac{\partial X}{\partial \lambda} = +47,98$

$Y_t = +15,3$

$\frac{\partial Y}{\partial \varphi} = +32,59$

$\frac{\partial Y}{\partial \lambda} = +12,58$

$Z_t = -115,0$

$\frac{\partial Z}{\partial \varphi} = +787,25$

$\frac{\partial Z}{\partial \lambda} = +70,98$

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$\mu_a = -325,4$

$\mu_b = +59,7$

$\mu_c = +22,5$

$e = -17,6$

$f = -26,2$

$g = -42,8$

$-2h - 0,060 i = +59,53 + 8,88 \tan i \dots 1)$

$-1,880 i = +31,22 + 5,51 \cos \delta \dots 2)$

$-1,026 i = -20,65 - 62,10 \cos \delta \dots 3)$

eredet:  $\cos \delta = -59^\circ 01' \quad i = -14,90 \quad h = -21,65$

az a helyre  $X_0 = +350,2$

$\xi = +25,4$

$Y_0 = +7,76$

$\eta = +7,8$

$Z_0 = -104,42$

$\zeta = -10,6$

+ ha a lötti ma-

radium  $\mu_a = -313,9$

akkor

$\delta = -66^\circ 50'$

$i = -15,4$

$h = -18,9$



$h, i$  és  $\delta$  korlátait

$$\frac{\partial f}{\partial \varphi} + \frac{y}{\cos \varphi} \frac{\partial f}{\partial \lambda} = 0 \text{ egyenlettel}$$

$$\lambda = -100 \quad \text{és} \quad \varphi = +50 \text{ ponton.}$$

lábak és  
szinusz

$$X_t = +175 \quad Y_t = +79 \quad Z_t = +550$$

Szinusz

$$\frac{\partial X_t}{\partial \varphi} = -382 \quad \frac{\partial Y_t}{\partial \varphi} = -37 \quad \frac{\partial Z_t}{\partial \varphi} = +318$$

$$\frac{\partial X_t}{\partial \lambda} = -97 \quad \frac{\partial Y_t}{\partial \lambda} = -64 \quad \frac{\partial Z_t}{\partial \lambda} = +159$$

$$\frac{\partial X}{\partial \lambda} + \frac{Y}{\cos \varphi} = \frac{\partial Y}{\partial \varphi} \cos \varphi \text{ egyenlettel} \quad \frac{\partial Y_t}{\partial \varphi} = -37$$

$$\frac{\partial X}{\partial \lambda} + \frac{Y}{\cos \varphi} = 0$$

$$\mu_a = -225,4 \quad \mu_b = +59,7 \quad \mu_c = +22,5$$

$$e = -17,6 \quad f = -26,2 \quad g = +42,8$$

$$\text{eredetben a} \quad \frac{\partial f}{\partial \varphi} + \frac{\partial f}{\partial \lambda} \frac{\cos \delta}{\cos \varphi} = 0$$

egyenlettel.

$$i = -38,29 \quad h = +42,14$$

Az előbbi  $i = -14,9$  és  $h = -21,65$  értékekkel

c képe és helye

{ értékek és körméletek  $-62^\circ$

{ értékek és körméletek  $-25^\circ$

{ értékek és körméletek  $-72^\circ$



$$\frac{\partial X}{\partial \varphi} = -195,83 - 30,91 - 14,92 + 4,69 + 15,76 = -221,21$$

$$\left( \frac{\partial X_t}{\partial \varphi} - \frac{\partial X_o}{\partial \varphi} \right) = -91,31 = \frac{\partial \delta}{\partial \varphi}$$

$$\frac{\partial X}{\partial \lambda} = -30,52 - 12,57 - 23,92 = -67,01$$

$$\left( \frac{\partial X_t}{\partial \lambda} - \frac{\partial X_o}{\partial \lambda} \right) = +36,19 \times$$

$$\frac{\partial Y}{\partial \varphi} = -36,43 - 14,97 = -51,40$$

$$\left( \frac{\partial Y_t}{\partial \varphi} - \frac{\partial Y_o}{\partial \varphi} \right) = +100,49 \times$$

$$\frac{\partial Y}{\partial \lambda} = -38,71 - 4,67 + 27,18 = -16,20$$

$$\left( \frac{\partial Y_t}{\partial \lambda} - \frac{\partial Y_o}{\partial \lambda} \right) = +7,26 \dots \frac{\partial \delta}{\partial \lambda}$$

$$\frac{\partial Z}{\partial \varphi} = +519,73 - 46,60 + 6,42 + 24,54 + 82,49 = +586,58$$

$$\left( \frac{\partial Z_t}{\partial \varphi} - \frac{\partial Z_o}{\partial \varphi} \right) = +100,85$$

erőteljes  $\delta = -27^\circ$

$$\frac{\partial Z}{\partial \lambda} = +81,0 - 65,79 + 47,61 = +62,82$$

$$\left( \frac{\partial Z_t}{\partial \lambda} - \frac{\partial Z_o}{\partial \lambda} \right) = +106,74$$

$$\frac{\partial Y}{\partial \lambda} + \frac{\partial Y}{\partial \varphi} \cos \varphi = Y \sin \varphi$$

$$0 = \frac{\partial Y}{\partial \lambda} \cos \varphi + \frac{\partial Y}{\partial \varphi} \sin \varphi$$

$$0 = \frac{\partial Y}{\partial \lambda} \cos \varphi + \frac{\partial Y}{\partial \varphi} \sin \varphi$$

$$\frac{\partial \delta}{\partial \varphi} \cos \varphi - \frac{\partial \delta}{\partial \lambda} \sin \varphi + \eta \sin \varphi \tan \delta = 0$$

1155,2

2652  
588

181  
260  
110  
270  
480

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$\begin{array}{r} 0,999529 - 1 \\ 2,059185 \\ \hline 2,058714 \\ 114,47 \\ 118 \\ \hline 11329 \end{array}$	$\begin{array}{r} 2,575188 \\ 0,609734 - 2 \\ \hline 1,184922 \\ 886491 - 2 \\ \hline 0,071413 \\ 118 \end{array}$	$\begin{array}{r} 0,999529 - 1 \\ 1,677242 \\ \hline 1,676771 \\ 47,51 \\ 47 \\ \hline 47,98 \end{array}$	$\begin{array}{r} 1,184922 \\ 491262 - 2 \\ \hline 0,676284 - 1 \\ 0,47 \end{array}$	$\begin{array}{r} 0,609734 - 2 \\ 2,059185 \\ \hline 0,668919 \\ 46,467 \end{array}$	$\begin{array}{r} 2,575188 \\ 999529 - 1 \\ \hline 2,574717 \\ 886491 - 2 \\ \hline 1,461208 \\ 28,92 \\ 467 \\ \hline 22,59 \end{array}$	$\begin{array}{r} 0,609734 - 2 \\ 1,677242 \\ \hline 0,286976 \\ 1,94 \end{array}$	$\begin{array}{r} 2,574717 \\ 491262 - 2 \\ \hline 1,066079 \\ 11,64 \\ 1,94 \\ \hline 13,58 \end{array}$
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$$\lg m_1 = 0,980596 - 1 \quad \lg 17^0 = 0,485339 - 1$$

$$\lg m_2 = 0,961192 - 1$$

$\lg \frac{u}{m_2} = \begin{array}{r} 2,575188 \\ 961192 - 1 \\ \hline 2,613996 \\ 201030 \\ \hline 2,915026 \\ 822,29 \\ 35,04 \\ \hline 787,25 \end{array}$	$\begin{array}{r} 0,485339 - 1 \\ 2,059185 \\ \hline 1,544524 \\ 35,04 \end{array}$	$\begin{array}{r} 2,613996 \\ 318063 - 1 \\ \hline 1,932059 \\ 85,52 \\ 14,54 \\ \hline 70,98 \end{array}$	$\begin{array}{r} 0,485339 - 1 \\ 1,677242 \\ \hline 1,162581 \\ 14,54 \end{array}$
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+ p<sub>1</sub> and - p<sub>2</sub> and - p<sub>3</sub> and  
+ 58,80 + 3,92 - 8,96

e and + g and  
+ 3,06 - 42,16



$$+p_{\text{end}} - p_{\text{end}} - f_{\text{end}} \\ +58,80 + 3,92 - 8,96$$

$$e_{\text{end}} + g_{\text{end}} \\ +3,06 - 42,16$$

$$113,29 \cos \delta + 47,98 \sin \delta = (53,76 - 2h - 0,060i) \cos \delta + 39,10 \sin \delta$$

$$33,59 \cos \delta + 13,58 \sin \delta = +39,10 \cos \delta + (44,80 + 1,880i) \sin \delta$$

$$787,25 \cos \delta + 70,98 \sin \delta = +725,15 \cos \delta + (50,33 + 1,026i) \sin \delta$$

(p<sub>12</sub> = 812,9 re + 702,15)

$$\sim = 32,032 + 5,653 \cos \delta$$

$$\sim = -38,822 - 116,748 \cos \delta$$

$$= 70,854122,901 \cos \delta$$

$$\cos \delta = -0,5788$$

$$\cos^2 \delta =$$

$$\cos^2 \delta - 1 + \cos^2 \delta = \cos 2\delta$$

$$\delta = -59^{\circ} 31'$$

$$\begin{array}{r} 35940 \\ 2065 \\ \hline 1529 \end{array}$$

$$\frac{16}{0,894}$$

$$113,29 + 47,98 \tan \delta = 53,76 + 39,10 \tan \delta - 2h - 0,060i$$

$$\begin{array}{r} 53,76 \\ 39,10 \\ \hline 59,53 \end{array}$$

$$33,59 \cos \delta + 13,58 = 39,10 \cos \delta + 44,80 + 1,880i$$

$$\begin{array}{r} 39,10 \\ 13,58 \\ \hline 52,68 \end{array}$$

$$787,25 \cos \delta + 70,98 = 725,15 \cos \delta + 50,33 + 1,026i$$

$$\begin{array}{r} 725,15 \\ 70,98 \\ \hline 796,13 \end{array}$$

$$\cos^2 \delta = \frac{1}{2} \cos 2\delta + \frac{1}{2}$$

$$\cos^2 \delta - 1 = \cos 2\delta$$

$$= \cos^2 \delta - \sin^2 \delta$$

$$\begin{array}{r} 5950 \\ -15,242 \\ \hline 44,19 \\ 89 \\ \hline 4330 \end{array}$$

$$h = 21,65$$



$$\frac{\partial \mathcal{L}}{\partial \varphi} = -2\mu_a \cos \varphi + 2\mu_b \sin \varphi \sin \alpha - 2\mu_c \sin \varphi \cos \alpha \\ - 3h \sin 2\varphi - 3e \cos 2\varphi \sin \alpha + 2g \cos 2\varphi \cos \alpha - \frac{3}{2}f \sin 2\varphi \sin \alpha - 3i \sin 2\varphi \cos^2 \alpha$$

$$\frac{\partial \mathcal{L}}{\partial \alpha} = -2\mu_b \cos \varphi \cos \alpha - 2\mu_c \cos \varphi \sin \alpha$$

$$- \frac{3}{2}e \sin 2\varphi \cos \alpha - \frac{3}{2}g \sin 2\varphi \sin \alpha + 2f \cos^2 \varphi \cos \alpha - 3i \cos^2 \varphi \sin \alpha$$

$$\cos^2 \alpha = \frac{1}{2} \cos 2\alpha + \frac{1}{2}$$

$$- \frac{3}{2}i \sin 2\varphi$$



$$\begin{aligned}
 0 &= -299c + 866h + 299e + 766i & 1) \\
 +4070 &= +288c - 663h + 641e + 316i & 2) \\
 -25440 &= -453c + 985h + 103e + 30i & 3) \\
 +12196 &= +448c - 145h - 603e + 557i & 4)
 \end{aligned}$$

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$$i = +0,3903c - 1,1305h - 0,3903e$$

$$2) \quad +4070 = +411c - 1020h + 518e$$

$$-25440 = -441c + 954h + 91e$$

$$+12196 = +665c - 775h - 820e$$


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$$\begin{aligned}
 1794870 &= -449820h + 228428e \\
 -10455840 &= +390861h + 37401e \\
 -16,917600 &= +632415h + 60515e \\
 +5,278426 &= -341775h - 361620e \\
 -11,539164 &= +290640h - 301105e
 \end{aligned}$$

$$i = +65,790$$

$$c = -157,946$$

$$e = -177,198$$

$$h = -94,477$$

$$c = -52,857$$

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$$-8,660970 = -58959h + 265839e \quad * \quad h = 274,579$$

$$+5,278426 = -341775h - 361620e$$

$$-8,660999 = -58969h + 265809e$$

$$-11,539066 = +290601h - 301105e$$

$$-25,168866h = -772415h + 60515e$$

$$-6803394h = +177529h + e$$

$$-31,972260 = 979944h + 664886e$$

$$1404939$$

$$866100$$

$$+538839$$

$$557056$$

$$1,591524$$

$$1,453906$$

$$2,745530$$



687,43

304,84  
913,94

228,84

59,52

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$$\frac{\partial X}{\partial \varphi} = +\mu_a \sin \varphi + \mu_b \cos \varphi \sin \lambda - \mu_c \cos \varphi \cos \lambda$$

$$- 2h \cos \varphi + 2e \sin \varphi \sin \lambda - 2g \sin \varphi \cos \lambda - f \cos 2\varphi \sin \lambda - 2i \cos 2\varphi \cos \lambda$$

$$\frac{\partial X}{\partial \varphi} = +\mu_b \sin \varphi \cos \lambda + \mu_c \sin \varphi \sin \lambda$$

$$- e \cos \varphi \cos \lambda - g \cos \varphi \sin \lambda - f \sin 2\varphi \cos \lambda + i \sin 2\varphi \sin \lambda$$

$$\frac{\partial X}{\partial \varphi} = -e \cos \varphi \cos \lambda - g \cos \varphi \sin \lambda - f \sin 2\varphi \cos \lambda + i \sin 2\varphi \sin \lambda$$

$$\frac{\partial Y}{\partial \varphi} = -\mu_c \cos \lambda + \mu_b \sin \lambda$$

$$+ e \sin \varphi \cos \lambda - g \sin \varphi \sin \lambda - 2f \cos \varphi \sin \lambda - 2i \cos \varphi \cos \lambda$$

$$(\mu_b \sin \lambda - \mu_c \cos \lambda)$$

-31,64  
-19,08  
-50,72

-40,50  
-81,00

1,5872  
-50,63  
+11,92  
-38,71  
23,00  
48,60

+14,92  
-22,68  
-7,76  
-7,14  
+6,42

+9,33  
+26,29  
+45,62  
+43,86  
21,90  
-65,79

327,36  
23,985  
151,016

+22,55  
+6,53  
-17,02

13,59

27,18

16,26  
8,18  
24,54

14,90  
42,30  
-57,20

14,90  
42,30

16,26  
8,18  
24,54

-13,39  
-11,49  
-24,88

+15,87  
47,61

28,29  
62,59  
19,821

579,73  
6,42  
24,54  
82,149  
633,118  
64,278  
27,50  
54,499

195,83  
20,91  
14,92  
241,66  
26,45  
221,21  
67,01  
43,38  
27,18  
20,91  
27,18  
26

586,58  
46,60  
81,009



$$\log H = 2,411620$$

$$\log \sin \delta = 0,444720 - 1$$

$$\log \cos \delta = 0,982477 - 1$$

$$\log \frac{\partial H}{\partial \varphi} = 2,457125$$

$$\log \frac{\partial \delta}{\partial \varphi} = 0,716003 - 1$$

$$\log \frac{\partial H}{\partial \lambda} = 1,506370$$

$$\log \frac{\partial \delta}{\partial \lambda} =$$

$$\begin{array}{r} 0,982477 - 1 \\ 2,411620 \\ \hline 2,394097 = H \sin \delta \end{array}$$

$$\begin{array}{r} 0,444720 - 1 \\ 2,411620 \\ \hline 1,856340 = H \sin \delta \end{array}$$

$$\begin{array}{r} 0,982477 - 1 \\ 2,457125 \\ \hline 2,439602 \\ 275,17 \\ 27,25 \\ \hline 237,92 \\ 212,52 \end{array}$$

$$\begin{array}{r} 1,856340 \\ 0,716003 - 1 \\ \hline 1,572343 \\ 37,75 \end{array}$$

$$\begin{array}{r} 0,982477 - 1 \\ 1,856340 \\ \hline 1,506370 \\ 1,488847 \\ \hline 30,82 \end{array}$$

$$\begin{array}{r} 120 \\ -70 \\ \hline 18/200/11 \\ 66 \end{array}$$

$$\begin{array}{r} 0,444720 - 1 \\ 2,457125 \\ \hline 1,901845 \\ -79,77 \end{array}$$

$$\begin{array}{r} 2,394097 \\ 716003 - 1 \\ \hline 2,110100 \\ +128,86 \\ 79,77 \\ \hline +49,09 \end{array}$$

$$\begin{array}{r} 0,444720 - 1 \\ 1,506370 \\ \hline 0,951090 \\ 8,94 \end{array}$$

$$\frac{\partial X}{\partial \lambda} + \sin \varphi = \frac{\partial Y}{\partial \varphi} \cos \varphi$$

$$-20,82 + 43,23 = 39,20$$

$$\log \cos i = 0,676728 - 1, \log i = 0,268254$$

$$\log \cos^2 i = 0,352656 - 1$$

$$\begin{array}{r} 2,411620 \\ 268254 \\ \hline 2,679874 \end{array}$$

$$\begin{array}{r} 2,411620 \\ 352656 - 1 \\ \hline 3,058964 \\ 026942 \\ \hline 3,085906 \end{array}$$

$$\begin{array}{r} 2,457125 \\ 268254 \\ \hline 2,725379 \\ 2,457125 \\ 226942 \\ \hline 2,484067 \\ 304,84 \end{array}$$

$$\begin{array}{r} 11454 \\ 229,08 \\ \hline 3,058964 \\ 1442,00 \\ 28840 \\ 59,52 \\ \hline 228,88 \end{array}$$

$$\log \frac{\partial i}{\partial \varphi} = 0,026942$$

$$\log \frac{\partial i}{\partial \lambda} = 0,301020 - 1$$

$$\begin{array}{r} 229,08 \\ 59,52 \\ \hline 169,56 \\ 0,268254 \\ 1,506370 \\ \hline 1,774624 \\ 59,52 \end{array}$$

$$\begin{array}{r} 1218,78 \\ 531,85 \\ \hline 687,43 \end{array}$$

$$\begin{array}{r} 1534,26 \\ 204,89 \\ \hline 1229,42 \\ 1218,78 \\ 304,84 \\ \hline 913,94 \end{array}$$

$$\frac{\partial X}{\partial \lambda} = +\mu_a \sin \varphi + \mu_s \cos \varphi \sin \delta - \mu_c \cos \varphi \cos \delta$$

$$\begin{array}{r} 221 \\ 26 \\ 141 \\ 14 \\ 20 \\ 195 \end{array}$$



San Francisco -

$$\varphi = +37^\circ$$

$$\lambda = -122.$$

$$H = +258$$

$$\frac{\partial H}{\partial \varphi} = -286,50$$

$$\frac{\partial H}{\partial \lambda} = -32,09$$

$$J = +16,10'$$

$$\frac{\partial J}{\partial \varphi} = +0,520$$

$$\frac{\partial J}{\partial \lambda} = 0$$

$$i = +61^\circ 40'$$

$$\frac{\partial i}{\partial \varphi} = +1,064$$

$$\frac{\partial i}{\partial \lambda} = +0,200$$

$$X_t = +247,80$$

$$\frac{\partial X_t}{\partial \varphi} = -312,52$$

$$\frac{\partial X_t}{\partial \lambda} = -30,82$$

$$y_t = +71,84$$

$$\frac{\partial y_t}{\partial \varphi} = +49,09$$

$$\frac{\partial y_t}{\partial \lambda} = -8,94$$

$$Z_t = +478,49$$

$$\frac{\partial Z_t}{\partial \varphi} = +687,42$$

$$\frac{\partial Z_t}{\partial \lambda} = +169,56$$

$$\frac{\partial X_t}{\partial \lambda} + y_t \sin \varphi = \frac{\partial y_t}{\partial \varphi} \cos \varphi$$

$$-30,82 + 49,20 = +18,38$$

$$y_s = +43,14$$

$$y_t - y_s = \eta = +28,7$$

$$\frac{\partial X_s}{\partial \varphi} = -221,21$$

$$\frac{\partial y_s}{\partial \varphi} = -16,20$$

$$\frac{\partial \xi}{\partial \varphi} = -91,01$$

$$\frac{\partial \eta}{\partial \varphi} = +7,26$$

$$\cos \varphi \frac{\partial \xi}{\partial \varphi} - \frac{\partial y_t}{\partial \lambda} \frac{1}{\eta} \delta - y \sin \varphi \frac{1}{\eta} \delta = 0 \quad \text{egyenletünk:}$$

$$\delta =$$

$$\text{Schmidt's: } \frac{\partial X_t}{\partial \varphi} = -312,52$$

$$\frac{\partial y_t}{\partial \lambda} = -36,5$$

$$\frac{\partial \xi}{\partial \varphi} = -91,01$$

$$\frac{\partial \eta}{\partial \lambda} = -20,3$$

Schmidt's

$$\frac{\partial X}{\partial \lambda} + y \sin \varphi = \frac{\partial y}{\partial \varphi} \cos \varphi$$

$$0 + 40,92 = +45,52$$

erő felhatalmazás a

$$\frac{1}{\eta} \delta = +0,425 \pm 1,923$$

$$\cos \varphi \frac{\partial \xi}{\partial \varphi} + \frac{\partial \eta}{\partial \lambda} \frac{1}{\eta} \delta = 0 \quad \text{egyenletünk} \quad \delta = -37^\circ$$



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$$\gamma = -20^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\text{in } \lambda}$	$Y_{\text{in } \lambda}$	$Z_{\text{in } \lambda}$	$X_{\text{cos } \lambda}$	$Y_{\text{cos } \lambda}$	$Z_{\text{cos } \lambda}$	$X_{\text{in } 2\lambda}$
0	209	-106	-170	0	0	0	+209	-106	-170	0
20	209	-86	-246	+71	-29	-84	+106	-81	-231	+134
40	221	-65	-317	+142	-42	-207	+169	-50	-243	+217
60	243	-41	-348	+210	-36	-301	+122	-21	-174	+210
80	270	-29	-362	+266	-29	-356	+47	-5	-63	+92
100	303	-15	-375	+298	-15	-369	-53	+3	+65	-104
120	330	+5	-388	+286	+4	-336	-115	-3	+194	-286
140	345	+30	-384	+222	+19	-247	-264	-23	+294	-340
160	345	+55	-335	+118	+19	-115	-324	-52	+315	-222
180	342	+59	-287	0	0	0	-342	-59	+287	0
200	335	+52	-247	-115	-18	+84	-315	-49	+232	+215
220	324	+45	-227	-208	-29	+146	-248	-34	+174	+319
240	316	+49	-205	-274	-42	+178	-158	-25	+103	+274
260	308	+64	-163	-303	-63	+161	-53	-11	+28	+105
280	289	+67	-108	-285	-66	+106	+50	+12	-19	-99
300	274	+28	-52	-237	-24	+45	+137	+14	-26	-237
320	257	-37	-35	-165	+24	+22	+197	-28	-27	-253
340	231	-89	-76	-79	+30	+26	+217	-84	-71	-148
	+5151	-14	-4325	-53	-297	-1244	-528	-602	+668	-123



- 20°

$X_{\sin 2\lambda}$   $Y_{\sin 2\lambda}$   $Z_{\sin 2\lambda}$   $X_{\cos 2\lambda}$   $Y_{\cos 2\lambda}$   $Z_{\cos 2\lambda}$

0	0	0	0	+ 209	- 106	- 170
1	+ 134	- 55	- 158	+ 160	- 66	- 188
3	+ 217	- 64	- 312	+ 38	- 11	- 55
4	+ 210	- 36	- 301	- 122	+ 21	+ 174
3	+ 92	- 10	- 124	- 254	+ 27	+ 340
5	- 104	+ 5	+ 128	- 285	+ 14	+ 352
4	- 286	- 4	+ 336	- 165	- 3	+ 194
4	- 340	- 30	+ 378	+ 60	+ 5	- 67
5	- 222	- 35	+ 215	+ 264	+ 42	- 257
7	0	0	0	+ 342	+ 59	- 287
2	+ 215	+ 33	- 159	+ 257	+ 40	- 189
4	+ 319	+ 44	- 224	+ 56	+ 8	- 39
3	+ 274	+ 42	- 178	- 158	- 25	+ 103
8	+ 105	+ 22	- 56	- 289	- 60	+ 153
9	- 99	- 23	+ 37	- 272	- 63	+ 101
	- 237	- 24	+ 45	- 137	- 14	+ 26
	- 253	+ 36	+ 34	+ 45	- 6	- 6
	- 148	+ 57	+ 49	+ 177	- 68	- 58
8	- 123	- 42	- 290	- 74	- 206	+ 127



$$\varphi = -20^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$
10	207	-97	-212	+36	-17	-37	+204	-96	-209	+71
30	214	-75	-284	+107	-38	-142	+185	-65	-246	+185
50	231	-54	-336	+177	-41	-257	+148	-35	-216	+227
70	256	-34	-357	+241	-32	-335	+88	-12	-122	+165
90	286	-21	-369	+286	-21	-369	0	0	0	0
110	316	-5	-383	+297	-5	-360	-108	+2	+131	-203
130	340	+14	-389	+260	+11	-298	-219	-9	+250	-335
150	346	+44	-364	+173	+22	-182	-300	-38	+315	-300
170	344 <sub>2540</sub>	+60 <sub>-168</sub>	-311 <sub>-3085</sub>	+60 <sub>+1637</sub>	+10 <sub>-111</sub>	-54 <sub>-2034</sub>	-339 <sub>-341</sub>	-59 <sub>-312</sub>	+306 <sub>+209</sub>	-118 <sub>-308</sub>
190	339	+56	-263	-59	-10	+46	-334	-55	+259	+116
210	330	+47	-234	-165	-24	+117	-286	-41	+203	+286
230	319	+45	-217	-244	-34	+166	-205	-29	+139	+314
250	313	+56	-187	-294	-50	+176	-107	-19	+64	+201
270	299	+71	-136	-299	-71	+136	0	0	0	0
290	280	+51	-77	-263	-48	+72	+96	+17	-26	-180
310	267	0	-37	-205	0	+28	+172	0	-24	-263
330	245	-68	-48	-123	+34	+24	+212	-59	-42	-212
350	217 <sub>2609</sub>	-105 <sub>+153</sub>	-121 <sub>-1320</sub>	-38 <sub>-1690</sub>	+18 <sub>-188</sub>	+21 <sub>+786</sub>	+214 <sub>-232</sub>	-103 <sub>-289</sub>	-119 <sub>+454</sub>	-74 <sub>+188</sub>
	5149	-15	-4325	-53	-299	-1248	-579	-601	+663	-120

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= -20°

	$X \sin 2\lambda$	$Y \sin 2\lambda$	$Z \sin 2\lambda$	$X \cos 2\lambda$	$Y \cos 2\lambda$	$Z \cos 2\lambda$	$X \sin^3 \lambda$	$Y \sin^3 \lambda$	$Z \sin^3 \lambda$	$X \cos^3 \lambda$	$Y \cos^3 \lambda$	$Z \cos^3 \lambda$
09	+ 71	- 33	- 73	+ 195	- 91	- 199	+ 1	- 1	- 1	+ 198	- 93	- 203
46	+ 185	- 65	- 246	+ 107	- 38	- 142	+ 27	- 9	- 36	+ 134	- 49	- 184
16	+ 227	- 53	- 331	- 40	+ 9	+ 58	+ 104	- 24	- 151	+ 61	- 14	- 89
22	+ 165	- 22	- 229	- 196	+ 26	+ 273	+ 213	- 28	- 297	+ 10	- 1	- 14
0	0	0	0	- 286	+ 21	+ 369	+ 286	- 21	- 369	0	0	0
31	- 203	+ 3	+ 246	- 242	+ 4	+ 293	+ 262	- 4	- 318	- 12	0	+ 15
50	- 335	- 14	+ 383	- 59	- 2	+ 68	+ 153	+ 6	- 175	- 90	- 4	+ 103
15	- 300	- 38	+ 315	+ 173	+ 22	- 182	+ 43	+ 6	- 46	- 225	- 29	+ 236
06	- 118	- 21	+ 106	+ 323	+ 56	- 292	+ 2	0	- 2	- 329	- 57	+ 297
209	- 308	- 243	+ 171	- 25	+ 7	+ 246						
59	+ 116	+ 19	- 90	+ 319	+ 53	- 247	- 2	0	+ 1	- 324	- 54	+ 251
3	+ 286	+ 41	- 203	+ 165	+ 24	- 117	- 41	- 6	+ 29	- 214	- 31	+ 152
9	+ 314	+ 45	- 214	- 55	- 8	+ 38	- 143	- 20	+ 98	- 85	- 12	+ 58
4	+ 201	+ 36	- 120	- 240	- 43	+ 143	- 260	- 47	+ 155	- 12	- 2	+ 7
0	0	0	0	- 299	- 71	+ 136	- 299	- 71	+ 136	0	0	0
6	- 180	- 33	+ 49	- 214	- 39	+ 59	- 233	- 42	+ 64	+ 11	+ 2	- 3
1	- 263	0	+ 36	- 46	0	+ 6	- 120	0	+ 17	+ 71	0	- 10
	- 212	+ 59	+ 42	+ 123	- 34	- 24	- 31	+ 9	+ 6	+ 159	- 44	- 31
454	- 74	+ 36	+ 41	+ 204	- 99	- 114	- 1	+ 1	+ 1	+ 207	- 100	- 116
	+ 188	+ 203	- 459	- 43	- 277	- 170						
3	- 120	- 40	- 288	- 68	- 210	+ 126	- 39	- 251	- 888	- 440	- 488	+ 469



										$\psi = 0^\circ$
$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$
0	282	- 98	- 41	0	0	0	+ 282	- 98	- 41	0
20	293	- 70	- 120	+ 100	- 24	- 41	+ 275	- 66	- 113	+ 188
40	310	- 42	- 137	+ 199	- 27	- 88	+ 237	- 32	- 105	+ 305
60	330	- 18	- 136	+ 286	- 16	- 118	+ 165	- 9	- 68	+ 286
80	353	0	- 131	+ 348	0	- 129	+ 61	0	- 23	+ 121
100	376	+ 16	- 116	+ 370	+ 16	- 114	- 65	- 3	+ 20	- 129
120	386	+ 15	- 91	+ 334	+ 13	- 79	- 193	- 8	+ 46	- 334
140	382	+ 21	- 83	+ 246	+ 13	- 53	- 293	- 16	+ 64	- 376
160	364	+ 47	- 63	+ 124	+ 16	- 22	- 342	- 44	+ 59	- 234
180	364 <sup>2076</sup>	+ 57	- 21	0	0	0	- 364	- 57	+ 21	0
200	357	+ 42	+ 5	- 122	- 14	- 2	- 335	- 39	- 5	+ 229
220	345	+ 29	+ 14	- 222	- 19	- 9	- 264	- 22	- 11	+ 340
240	353	+ 32	+ 25	- 306	- 28	- 22	- 177	- 16	- 13	+ 306
260	353	+ 58	+ 52	- 348	- 57	- 51	- 61	- 10	- 9	+ 121
280	338	+ 44	+ 96	- 333	- 43	- 95	+ 59	+ 8	+ 17	- 116
300	305	+ 11	+ 133	- 264	- 10	- 115	+ 153	+ 6	+ 67	- 264
320	293	- 49	+ 141	- 188	+ 31	- 91	+ 224	- 38	+ 108	- 289
340	276 <sub>274</sub>	- 107	+ 67	- 94	+ 37	- 23	+ 259	- 101	+ 63	- 177
	+ 6060	- 12	- 406	+ 130	- 112	- 1052	- 379	- 545	+ 77	- 23



11	0°
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	$X \sin 2\lambda$	$Y \sin 2\lambda$	$Z \sin 2\lambda$	$X \cos 2\lambda$	$Y \cos 2\lambda$	$Z \cos 2\lambda$
1	0	0	0	+ 282	- 98	- 41
3	+ 188	- 45	- 77	+ 224	- 54	- 92
5	+ 305	- 42	- 135	+ 54	- 7	- 24
8	+ 286	- 16	- 118	- 165	+ 9	+ 68
13	+ 121	0	- 45	- 332	0	+ 123
10	- 129	- 5	+ 40	- 353	- 15	+ 109
6	- 334	- 13	+ 79	- 193	- 8	+ 46
4	- 376	- 21	+ 82	+ 66	+ 4	- 14
9	- 234	- 30	+ 40	+ 279	+ 36	- 48
11	0	0	0	+ 364	+ 57	- 21
5	+ 229	+ 27	+ 3	+ 273	+ 32	+ 4
1	+ 340	+ 29	+ 14	+ 60	+ 5	+ 2
3	+ 306	+ 28	+ 22	- 177	- 16	- 13
13	+ 121	+ 20	+ 18	- 332	- 55	- 49
7	- 116	- 15	- 33	- 318	- 41	- 90
7	- 264	- 10	- 115	- 153	- 6	- 67
8	- 289	+ 48	- 139	+ 51	- 9	+ 24
13	- 177	+ 69	- 43	+ 211	- 82	+ 51
7	- 23	+ 24	- 407	- 159	- 248	- 32



$\gamma = 0^\circ$

$\lambda$	$X$	$Y$	$Z$	$X_{\text{inl}}$	$Y_{\text{inl}}$	$Z_{\text{inl}}$	$X_{\text{outl}}$	$Y_{\text{outl}}$	$Z_{\text{outl}}$	$X_{\text{in2d}}$	$Y$
10	287	-85	-86	+50	-15	-15	+283	-84	-85	+98	-
30	301	-55	-133	+151	-28	-67	+261	-48	-115	+261	-
50	320	-28	-138	+245	-21	-106	+206	-18	-89	+315	-
70	341	-8	-134	+320	-7	-126	+117	-3	-46	+219	-
90	366	+10	-126	+366	+10	-126	0	0	0	0	-
110	382	+16	-101	+359	+15	-95	-131	-5	+35	-246	-
130	388	+12	-85	+297	+9	-65	-249	-8	+55	-382	-
150	373	+34	-77	+187	+17	-39	-323	-29	+67	-323	-
170	363	+56	-43	+63	+10	-7	-357	-55	+42	-124	-
190	361 <sup>3121</sup>	+50 <sup>-48</sup>	-5 <sup>-923</sup>	-63 <sup>+2038</sup>	-9 <sup>-10</sup>	+1 <sup>-646</sup>	-355 <sup>-193</sup>	-49 <sup>-250</sup>	+5 <sup>-136</sup>	+123 <sup>-182</sup>	+
210	351	+31	+10	-176	-16	-5	-304	-27	-9	+304	+
230	348	+29	+18	-267	-22	-14	-224	-19	-12	+343	+
250	355	+40	+38	-334	-38	-36	-121	-14	-13	+228	+
270	347	+53	+73	-347	-53	-73	0	0	0	0	-
290	320	+28	+115	-301	-26	-108	+109	+10	+39	-206	-
310	300	-13	+148	-230	+10	-113	+193	-8	+95	-205	+
330	283	-86	+114	-142	+43	-57	+245	-74	+99	-245	+
350	277 <sup>2442</sup>	-109 <sup>+23</sup>	+10 <sup>+527</sup>	-48 <sup>-1908</sup>	+19 <sup>-32</sup>	-2 <sup>-407</sup>	+273 <sup>-184</sup>	-107 <sup>-288</sup>	+10 <sup>+214</sup>	-95 <sup>+157</sup>	+
	6063	-25	-402	+130	-102	-1053	-377	-538	+78	-25	+



$\beta = 0^\circ$ 

	$X \sin 2\lambda$	$Y \sin 2\lambda$	$Z \sin 2\lambda$	$X \cos 2\lambda$	$Y \cos 2\lambda$	$Z \cos 2\lambda$	$X \sin^3 \lambda$	$Y \sin^3 \lambda$	$Z \sin^3 \lambda$	$X \cos^3 \lambda$	$Y \cos^3 \lambda$	$Z \cos^3 \lambda$
5	+ 98	- 29	- 29	+ 270	- 80	- 81	+ 2	0	0	+ 274	- 81	- 82
5	+ 261	- 48	- 115	+ 151	- 28	- 67	+ 38	- 7	- 17	+ 195	- 36	- 86
9	+ 315	- 28	- 136	- 56	+ 5	+ 24	+ 144	- 13	- 62	+ 85	- 7	- 37
6	+ 219	- 5	- 86	- 261	+ 6	+ 103	+ 283	- 7	- 111	+ 14	0	- 5
0	0	0	0	- 366	- 10	+ 126	+ 366	+ 10	- 126	0	0	0
5	- 246	- 10	+ 65	- 293	- 12	+ 77	+ 317	+ 13	- 84	- 15	- 1	+ 4
5	- 382	- 12	+ 84	- 67	- 2	+ 15	+ 174	+ 5	- 38	- 103	- 3	+ 23
7	- 323	- 29	+ 67	+ 187	+ 17	- 39	+ 47	+ 4	- 10	- 242	- 22	+ 50
2	- 124	- 19	+ 15	+ 341	+ 53	- 40	+ 2	0	0	- 347	- 54	+ 41
6	- 182	- 180	- 135	- 94	- 51	+ 118	- 2	0	0	- 345	- 48	+ 5
	+ 123	+ 17	- 2	+ 339	+ 47	- 5	- 44	- 4	- 1	- 228	- 20	- 6
	+ 304	+ 27	+ 9	+ 176	+ 25	+ 3	- 156	- 13	- 8	- 92	- 8	- 5
	+ 343	+ 29	+ 18	- 60	- 5	- 3	- 295	- 33	- 32	- 14	- 2	- 2
	+ 228	+ 26	+ 24	- 272	- 31	- 29	- 347	- 53	- 73	0	0	0
0	0	0	0	- 347	- 53	- 73	- 266	- 23	- 96	+ 13	+ 1	+ 5
	- 206	- 18	- 74	- 245	- 21	- 88	- 135	+ 7	- 67	+ 80	- 3	+ 39
	- 295	+ 13	- 146	- 52	+ 2	- 26	- 35	+ 11	- 14	+ 184	- 56	+ 74
	- 245	+ 74	- 99	+ 142	- 43	+ 57	- 1	+ 1	0	+ 265	- 104	+ 10
24	- 95	+ 37	- 273	+ 260	- 102	+ 9	+ 92	- 102	- 739	- 276	- 444	+ 28
	- 25	+ 25	- 408	- 153	- 232	- 37						



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$$\gamma = -60^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$	$Y_{\sin 2\lambda}$	$Z_{\sin 2\lambda}$
0	190	-74	-370	0	0	0	+190	-74	-370	0	0	0
20	155	-93	-407	+53	-32	-139	+146	-87	-382	+100	-62	-171
40	131	-100	-450	+84	-64	-289	+100	-77	-345	+129	-129	-258
60	108	-102	-491	+94	-88	-425	+54	-51	-246	+94	-171	-258
80	85	-101	-539	+84	-99	-531	+15	-18	-94	+29	-171	-258
100	77	-75	-602	+76	-74	-593	-13	+13	+105	-26	+171	-258
120	72	-33	-645	+62	-29	-559	-36	+17	+323	-62	+171	-258
140	80	+3	-655	+51	+2	-421	-61	-2	+502	-79	+171	-258
160	101	+37	-639	+35	+13	-219	-95	-35	+600	-65	+171	-258
180	130	+53	-639	0	0	0	-130	-53	+639	0	0	0
200	156	+56	-633	-53	-19	+216	-147	-53	+595	+100	-62	-171
220	174	+64	-624	-112	-41	+401	-133	-49	+478	+171	-129	-258
240	190	+85	-606	-165	-74	+525	-95	-43	+303	+165	-129	-258
260	210	+113	-561	-207	-111	+552	-36	-20	+97	+72	-129	-258
280	234	+123	-476	-231	-121	+469	+41	+21	-83	-80	-129	-258
300	258	+82	-380	-223	-71	+329	+129	+41	-190	-223	-129	-258
320	254	+20	-341	-163	-13	+219	+195	+15	-261	-250	-129	-258
340	227	-36	-350	-78	+12	+120	+213	-34	-329	-146	-129	-258
	+2832	+22	-9408	-693	-809	-345	+337	-489	+1342	-71	-129	-258



$$= -60^\circ$$

sl	$X_{\sin 2\lambda}$	$Y_{\sin 2\lambda}$	$Z_{\sin 2\lambda}$	$X_{\cos 2\lambda}$	$Y_{\cos 2\lambda}$	$Z_{\cos 2\lambda}$
0	0	0	0	+ 190	- 74	- 370
3.2	+ 100	- 60	- 262	+ 119	- 71	- 312
15	+ 129	- 98	- 443	+ 23	- 17	- 78
46	+ 94	- 88	- 425	- 54	+ 51	+ 246
94	+ 29	- 35	- 185	- 80	+ 95	+ 506
105	- 26	+ 26	+ 206	- 72	+ 70	+ 566
23	- 62	+ 29	+ 559	- 36	+ 17	+ 323
102	- 79	- 3	+ 645	+ 14	+ 1	- 114
100	- 65	- 24	+ 411	+ 77	+ 28	- 489
39	0	0	0	+ 130	+ 53	- 639
95	+ 100	+ 36	- 407	+ 119	+ 43	- 485
78	+ 171	+ 63	- 615	+ 30	+ 11	- 108
103	+ 165	+ 74	- 525	- 95	- 43	+ 303
97	+ 72	+ 39	- 192	- 197	- 106	+ 527
83	- 80	- 42	+ 163	- 220	- 116	+ 447
10	- 223	- 71	+ 329	- 129	- 41	+ 190
61	- 250	- 20	+ 336	+ 44	+ 3	- 59
29	- 146	+ 23	+ 225	+ 174	- 28	- 268
12	- 71	- 151	- 180	+ 37	- 124	+ 186



$$\psi = -60^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$
10	171	-86	-390	+30	-15	-68	+168	-85	-384	+58
30	143	-97	-428	+72	-49	-214	+124	-84	-371	+124
50	120	-101	-469	+92	-77	-359	+77	-65	-301	+118
70	97	-101	-513	+91	-95	-482	+33	-35	-175	+62
90	78	-92	-575	+78	-92	-575	0	0	0	0
110	75	-54	-631	+70	-51	-593	-26	+18	+216	-48
130	73	-14	-650	+56	-11	-498	-47	+9	+418	-72
150	89	+21	-627	+45	+11	-314	-77	-18	+543	-77
170	114 <sub>960</sub>	+49 <sub>-475</sub>	-638 <sub>-4921</sub>	+20 <sub>+554</sub>	+9 <sub>-370</sub>	-111 <sub>-3214</sub>	-112 <sub>+140</sub>	-48 <sub>-308</sub>	+628 <sub>+574</sub>	-39 <sub>+126</sub>
190	144	+55	-636	-25	-10	+110	-142	-54	+626	+49
210	166	+59	-631	-83	-30	+316	-144	-51	+546	+144
230	182	+73	-623	-139	-56	+477	-117	-47	+400	+179
250	200	+98	-588	-188	-92	+553	-68	-34	+201	+129
270	220	+123	-522	-220	-123	+522	0	0	0	0
290	250	+108	-425	-235	-101	+399	+86	+37	-145	-161
310	259	+54	-353	-198	-41	+270	+166	+35	-227	-255
330	244	-10	-343	-122	+5	+172	+211	-9	-297	-211
350	209 <sub>1874</sub>	-57 <sub>+503</sub>	-359 <sub>-4480</sub>	-36 <sub>-1216</sub>	+10 <sub>-438</sub>	+62 <sub>+2821</sub>	+206 <sub>+148</sub>	-56 <sub>-179</sub>	-354 <sub>+750</sub>	-71 <sub>-197</sub>
	2834	+28	-9401	-692	-808	-333	+338	-487	+1324	-71



= -60°												
	$X_{sin2\lambda}$	$Y_{sin2\lambda}$	$Z_{sin2\lambda}$	$X_{cos2\lambda}$	$Y_{cos2\lambda}$	$Z_{cos2\lambda}$	$X_{sin3\lambda}$	$Y_{sin3\lambda}$	$Z_{sin3\lambda}$	$X_{cos3\lambda}$	$Y_{cos3\lambda}$	$Z_{cos3\lambda}$
34	+ 58	- 29	- 133	+ 160	- 81	- 366	+ 1	0	- 2	+163	- 82	- 373
1	+ 124	- 84	- 371	+ 72	- 49	- 214	+ 18	- 12	- 54	+ 93	- 63	- 278
1	+ 118	- 99	- 462	- 21	+ 18	+ 81	+ 54	- 45	- 211	+ 31	- 27	- 125
5	+ 62	- 65	- 330	- 74	+ 77	+ 393	+ 81	- 84	- 426	+ 4	- 4	- 21
	0	0	0	- 78	+ 92	+ 575	+ 78	- 92	- 575	0	0	0
6	- 48	+ 35	+ 406	- 57	+ 41	+ 483	+ 62	- 45	- 524	- 3	+ 2	+ 25
8	- 72	+ 14	+ 640	- 13	+ 2	+ 113	+ 33	- 6	- 292	- 19	+ 4	+ 173
3	- 77	- 18	+ 543	+ 45	+ 11	- 314	+ 11	+ 3	- 78	- 58	- 14	+ 407
8	- 39	- 17	+ 218	+ 107	+ 46	- 600	+ 1	0	- 3	- 109	- 47	+ 610
6	+ 49	+ 19	- 218	+ 135	+ 52	- 598	- 1	0	+ 3	- 138	- 53	+ 608
6	+ 144	+ 51	- 546	+ 83	+ 30	- 316	- 21	- 7	+ 79	- 108	- 38	+ 410
0	+ 179	+ 72	- 614	- 32	- 13	+ 108	- 82	- 33	+ 280	- 48	- 19	+ 166
1	+ 129	+ 63	- 378	- 153	- 75	+ 450	- 166	- 81	+ 488	- 8	- 4	+ 24
0	0	0	0	- 220	- 123	+ 522	- 220	- 123	+ 522	0	0	0
5	- 161	- 69	+ 273	- 192	- 83	+ 326	- 207	- 90	+ 353	+ 10	+ 4	- 17
7	- 255	- 53	+ 348	- 45	- 9	+ 61	- 116	- 24	+ 159	+ 69	+ 14	- 94
7	- 211	+ 9	+ 297	+ 122	- 5	- 172	- 31	+ 1	+ 43	+ 158	- 6	- 223
50	- 71	+ 111	+ 123	+ 196	- 54	- 337	- 1	0	+ 2	+ 200	- 54	- 343
4	- 71	- 152	- 204	+ 35	- 123	+ 195	- 506	- 638	- 236	+ 237	- 387	+ 949



$$y = + 20^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$
0	285	- 77	174	0	0	0	+ 285	- 77	+ 174	0
20	313	- 52	125	+ 107	- 18	+ 43	+ 294	- 49	+ 117	+ 201
40	338	- 25	126	+ 217	- 16	+ 81	+ 259	- 19	+ 97	+ 333
60	361	- 2	137	+ 313	- 2	+ 119	+ 181	- 1	+ 69	+ 313
80	380	+ 14	160	+ 374	+ 14	+ 158	+ 66	+ 2	+ 28	+ 130
100	373	+ 22	187	+ 367	+ 22	+ 184	- 65	- 4	- 32	- 128
120	361	+ 1	199	+ 313	+ 1	+ 172	- 181	- 1	- 100	- 313
140	343	+ 1	179	+ 220	+ 1	+ 115	- 263	- 1	- 137	- 338
160	325	+ 31	160	+ 111	+ 11	+ 55	- 305	- 29	- 150	- 209
180	312 <sup>3079</sup>	+ 52 <sup>-87</sup>	186	0	0	0	- 312	- 52 <sup>-179</sup>	- 186	0
200	309	+ 47	231	- 106	- 16	- 79	- 290	- 44	- 217	+ 199
220	315	+ 47	265	- 202	- 30	- 170	- 241	- 36	- 203	+ 310
240	330	+ 53	298	- 286	- 46	- 258	- 165	- 27	- 149	+ 286
260	333	+ 46	340	- 328	- 44	- 335	- 58	- 8	- 59	+ 114
280	321	+ 19	370	- 316	- 19	- 364	+ 56	+ 3	+ 64	- 110
300	291	- 17	376	- 252	+ 15	- 326	+ 146	- 9	+ 188	- 252
320	263	- 66	347	- 169	+ 42	- 223	+ 201	- 51	+ 266	- 259
340	262 <sub>276</sub>	- 93 <sub>+22</sub>	268	- 90	+ 32	- 92	+ 246	- 87 <sub>211</sub>	+ 252	- 168
	+5815	+ 1	+ 4128	+ 273	- 53	- 920	- 146	- 490	+ 22	+ 109



+ 20°

$X \sin 2\lambda$	$Y \sin 2\lambda$	$Z \sin 2\lambda$	$X \cos 2\lambda$	$Y \cos 2\lambda$	$Z \cos 2\lambda$
0	0	0	+ 285	- 77	+ 174
+ 201	- 33	+ 80	+ 240	- 40	+ 96
+ 333	- 25	+ 124	+ 59	- 4	+ 22
+ 313	- 2	+ 119	- 181	+ 1	- 69
+ 130	+ 5	+ 55	- 357	- 13	- 150
- 128	- 8	- 64	- 351	- 21	- 176
- 313	- 1	- 172	- 181	- 1	- 100
- 338	- 1	- 176	+ 60	0	+ 31
- 209	- 20	- 103	+ 249	+ 24	+ 123
0	0	0	+ 312	+ 52	+ 186
+ 199	+ 30	+ 149	+ 237	+ 36	+ 177
+ 310	+ 46	+ 261	+ 55	+ 8	+ 46
+ 286	+ 46	+ 258	- 165	- 27	- 149
+ 114	+ 16	+ 116	- 313	- 43	- 319
- 110	- 6	- 127	- 302	- 18	- 348
- 252	+ 15	- 326	- 146	+ 9	- 188
- 259	+ 65	- 342	+ 46	- 11	+ 60
- 168	+ 60	- 172	+ 201	- 71	+ 205
+ 109	+ 187	- 320	- 252	- 196	- 379



$$\varphi = +20^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$	$Y_{\sin 2\lambda}$
10	298	-66	139	+52	-11	+24	+293	-65	+137	+102	-
30	326	-38	123	+163	-19	+62	+282	-33	+107	+282	-
50	350	-10	131	+268	-8	+100	+225	-6	+84	+344	-
70	372	+6	146	+350	+5	+137	+127	+2	+50	+239	+
90	378	+20	173	+378	+20	+173	0	0	0	0	
110	368	+11	197	+346	+10	+185	-126	-4	-67	-237	-
130	352	-5	192	+270	-4	+147	-226	+3	-123	-347	+
150	334	+14	166	+167	+7	+83	-289	-12	-144	-289	-
170	317	+47	167	+55	+8	+29	-312	-46	-164	-108	-
190	309	+51	208	-54	-9	-36	-304	-50	-205	+106	+
210	309	+45	248	-155	-23	-124	-268	-39	-215	+268	+
230	322	+50	280	-247	-38	-214	-207	-32	-180	+317	+
250	334	+52	320	-314	-49	-301	-114	-12	-109	+215	+
270	330	+35	355	-320	-35	-355	0	0	0	0	
290	307	+5	374	-288	-5	-351	+105	+2	+128	-197	-
310	278	-21	313	-213	+16	-240	+179	-13	+201	-274	+
330	227	-63	262	-114	+32	-131	+197	-55	+227	-197	+
350	272	-86	220	-47	+15	-38	+268	-85	+217	-92	+
	5783	+47	+4014	+287	-88	-850	-170	-445	-56	+131	+



+ 20°												
$\lambda$	$X_{sin 2\lambda}$	$Y_{sin 2\lambda}$	$Z_{sin 2\lambda}$	$X_{cos 2\lambda}$	$Y_{cos 2\lambda}$	$Z_{cos 2\lambda}$	$X_{sin^3 \lambda}$	$Y_{sin^3 \lambda}$	$Z_{sin^3 \lambda}$	$X_{cos^3 \lambda}$	$Y_{cos^3 \lambda}$	$Z_{cos^3 \lambda}$
37	+ 102	- 23	+ 48	+ 280	- 62	+ 131	+ 2	0	+ 1	+285	-63	+133
7	+ 282	- 33	+ 107	+ 163	- 19	+ 62	+ 41	- 5	+ 15	+212	-25	+80
34	+ 344	- 10	+ 129	- 61	+ 2	- 23	+157	- 4	+ 59	+93	-3	+35
0	+ 239	+ 4	+ 94	- 285	- 5	- 112	+ 309	+ 5	+ 121	+15	0	+ 6
0	0	0	0	- 378	- 20	- 173	+ 378	+ 20	+ 173	0	0	0
7	- 237	- 7	- 127	- 282	- 8	- 151	+ 306	+ 9	+ 164	-15	0	-8
3	- 347	+ 5	- 189	- 67	+ 1	- 33	+ 158	- 2	+ 86	-94	+1	-51
4	- 289	- 12	- 144	+167	+ 7	+ 83	+ 42	+ 2	+ 21	-217	-9	-108
4	- 108	- 16	- 57	+ 298	+ 44	+ 157	+ 2	0	+ 1	-303	-45	-160
120	<sup>-14</sup> + 106	<sup>-92</sup> + 17	<sup>-139</sup> + 71	<sup>-159</sup> + 290	<sup>-60</sup> + 48	<sup>-59</sup> + 195	- 2	0	- 1	-295	-49	-199
5	+ 268	+ 39	+ 215	+ 155	+ 23	+ 124	- 39	- 6	- 31	-201	-29	-161
0	+ 317	+ 49	+ 276	- 56	- 9	- 49	- 145	- 22	- 126	- 86	- 13	- 74
9	+ 215	+ 33	+ 206	- 256	- 40	- 245	- 277	- 43	- 266	- 13	- 2	- 13
0	0	0	0	- 330	- 35	- 355	- 330	- 35	- 355	0	0	0
8	- 197	- 3	- 240	- 235	- 4	- 286	- 255	- 4	- 311	+12	+ 0	+15
1	- 274	+ 21	- 308	- 48	+ 4	- 54	- 125	+ 9	- 141	+74	- 6	+83
7	- 197	+ 55	- 227	+ 114	- 32	+ 131	- 28	+ 8	- 33	+147	-41	+170
764	- 92	+ 20	- 75	+ 256	- 81	+ 207	- 1	0	- 1	+260	-82	+210
	<sup>-145</sup> + 131	<sup>-120</sup> + 148	<sup>-82</sup> - 221	<sup>-110</sup> - 269	<sup>-126</sup> - 186	<sup>-332</sup> - 391	+193	-68	-624	-126	-366	-42



$$\varphi = -40^\circ$$

$\lambda$	$X$	$Y$	$Z$	$X \sin \lambda$	$Y \sin \lambda$	$Z \sin \lambda$	$X \cos \lambda$	$Y \cos \lambda$	$Z \cos \lambda$	$X \sin 2\lambda$	$Y$
10	172	-100	-287	+30	-17	-50	+169	-98	-283	+59	-
30	158	-98	-348	+79	-49	-174	+137	-85	-301	+137	-
50	159	-89	-407	+122	-68	-312	+102	-57	-262	+157	-
70	167	-77	-458	+160	-72	-430	+57	-26	-157	+107	-
90	179	-66	-497	+179	-66	-497	0	0	0	0	-
110	195	-41	-542	+183	-39	-509	-67	+14	+185	-125	+
130	214	+3	-591	+164	+2	-453	-138	-2	+380	-211	-
150	221	+40	-565	+111	+20	-283	-191	-35	+489	-191	-
170	236	+62	-525	+41	+11	-91	-232	-61	+517	-81	-
190	254	+61	-482	-44	-11	+84	-250	-60	+475	+87	+
210	262	+56	-443	-131	-28	+222	-226	-48	+384	+227	+
230	262	+58	-416	-201	-44	+319	-168	-37	+267	+258	+
250	262	+73	-388	-246	-69	+265	-90	-25	+132	+168	+
270	267	+97	-334	-267	-97	+334	0	0	0	0	-
290	271	+80	-235	-255	-75	+221	+93	+27	-80	-174	-
310	262	+20	-173	-201	-15	+133	+168	+13	-111	-258	-
330	235	-43	-180	-118	+22	+90	+204	-37	-156	-204	+
350	200	-85	-230	-35	+15	+40	+197	-84	-227	-68	+
	3976	-49	-7101	-429	-580	-991	-235	-601	+1252	-112	-



	-40°												
	$X_{sin 2\lambda}$	$Y_{sin 2\lambda}$	$Z_{sin 2\lambda}$	$X_{cos 2\lambda}$	$Y_{cos 2\lambda}$	$Z_{cos 2\lambda}$	$X_{sin 3\lambda}$	$Y_{sin 3\lambda}$	$Z_{sin 3\lambda}$	$X_{cos 3\lambda}$	$Y_{cos 3\lambda}$	$Z_{cos 3\lambda}$	
3	+ 59	- 34	- 98	+ 162	- 94	- 270	+ 1	- 1	- 2	+164	-96	-274	
1	+137	- 85	- 301	+ 79	- 49	- 174	+ 20	- 12	- 44	+103	-64	-226	
2	+157	- 88	- 401	- 28	+ 15	+ 71	+ 71	- 40	- 183	+ 42	-24	-108	
7	+107	- 49	- 294	- 128	+ 59	+ 351	+ 139	- 64	- 380	+7	-3	-18	
0	0	0	0	- 179	+ 66	+ 497	+ 179	- 66	- 497	0	0	0	
5	- 125	+ 26	+ 348	- 149	+ 31	+ 415	+ 162	- 34	- 450	-8	+2	+22	
0	- 211	- 3	+ 58.2	- 37	- 1	+ 103	+ 96	+ 1	- 266	-57	-1	+157	
39	-191	- 35	+ 489	+ 111	+ 20	- 283	+ 28	+ 5	- 71	-144	-26	+367	
17	- 81	- 21	+ 180	+ 222	+ 58	- 493	+ 1	0	- 3	-226	-59	+502	
75	+ 87	+ 21	- 165	+ 239	+ 57	- 453	- 1	0	+ 3	-243	-58	+461	
34	+ 227	+ 48	- 384	+ 131	+ 28	- 222	- 33	- 7	+ 55	-170	-36	+288	
7	+ 258	+ 57	- 410	- 45	- 10	+ 72	- 118	- 26	+ 187	-70	-15	+110	
2	+168	+ 47	- 249	- 201	- 56	+ 297	- 218	- 61	+ 322	-10	- 3	+16	
0	0	0	0	- 267	- 97	+ 334	- 267	- 97	+ 334	0	0	0	
0	-174	- 51	+ 151	- 208	- 61	+ 180	- 225	- 66	+ 195	+11	+ 3	- 9	
1	- 258	- 20	+ 170	- 45	- 3	+ 30	- 118	- 9	+ 78	+70	+ 5	-46	
6	- 204	+ 37	+ 156	+118	- 22	- 90	- 29	+ 5	+ 23	+153	-28	-117	
7	- 68	+ 29	+ 79	+ 188	- 80	-276	- 1	0	+ 1	+191	-81	-220	
52	-112	-121	-147	- 37	-139	+149	-313	-472	-698	-187	-484	+905	



											$y = -40^\circ$
$\lambda$	$X$	$Y$	$Z$	$X_{\sin \lambda}$	$Y_{\sin \lambda}$	$Z_{\sin \lambda}$	$X_{\cos \lambda}$	$Y_{\cos \lambda}$	$Z_{\cos \lambda}$	$X_{\sin 2\lambda}$	$Y_{\sin 2\lambda}$
0	184	- 95	- 258	0	0	0	+ 184	- 95	- 258	0	
20	163	- 101	- 317	+ 56	- 35	- 108	+ 153	- 95	- 298	+ 105	
40	157	- 95	- 378	+ 101	- 61	- 243	+ 120	- 73	- 290	+ 155	
60	163	- 83	- 435	+ 141	- 72	- 377	+ 82	- 42	- 218	+ 141	
80	172	- 73	- 478	+ 169	- 72	- 471	+ 30	- 13	- 83	+ 59	
100	187	- 56	- 519	+ 184	- 55	- 511	- 32	+ 10	+ 90	- 64	
120	203	- 18	- 566	+ 176	- 16	- 490	- 102	+ 9	+ 283	- 176	
140	218	+ 22	- 585	+ 140	+ 14	- 376	- 167	- 17	+ 448	- 275	
160	228	+ 52	- 540	+ 78	+ 18	- 185	- 214	- 49	+ 507	- 147	
	<sup>+1675</sup> 246	<sup>-447</sup> + 63	<sup>-4076</sup> - 501	<sup>+1045</sup> 0	<sup>-279</sup> 0	<sup>-2761</sup> 0	<sup>+54</sup> - 246	<sup>-365</sup> - 63	<sup>+181</sup> + 501	<sup>-142</sup> 0	
180	246	+ 63	- 501	0	0	0	- 246	- 63	+ 501	0	
200	260	+ 58	- 463	- 89	- 20	+ 158	- 244	- 55	+ 435	+ 167	
220	262	+ 56	- 428	- 168	- 36	+ 275	- 201	- 43	+ 328	+ 258	
240	262	+ 64	- 404	- 227	- 55	+ 350	- 131	- 32	+ 202	+ 227	
260	265	+ 86	- 360	- 261	- 85	+ 355	- 46	- 15	+ 62	+ 91	
280	271	+ 96	- 284	- 267	- 95	+ 280	+ 47	+ 17	- 49	- 93	
300	267	+ 53	- 195	- 231	- 46	+ 169	+ 134	+ 27	- 98	- 231	
320	250	- 14	- 168	- 161	+ 9	+ 108	+ 192	- 11	- 129	- 246	
340	218	- 67	- 202	- 75	+ 23	+ 69	+ 205	- 63	- 190	- 149	
	<sup>+2301</sup> +3976	<sup>+395</sup> - 52	<sup>-3005</sup> - 7081	<sup>-1479</sup> - 434	<sup>-305</sup> - 584	<sup>+764</sup> - 997	<sup>-248</sup> - 236	<sup>+1062</sup> - 603	<sup>-1062</sup> + 1243	<sup>-1479</sup> - 109	



$$\phi = -40^\circ$$

$X_{\sin 2\lambda}$     $Y_{\sin 2\lambda}$     $Z_{\sin 2\lambda}$     $X_{\cos 2\lambda}$     $Y_{\cos 2\lambda}$     $Z_{\cos 2\lambda}$

8	0	0	0	+ 184	- 95	- 258
8	+ 105	- 65	- 204	+ 125	- 77	- 243
0	+ 155	- 94	- 372	+ 27	- 16	- 66
18	+ 141	- 72	- 377	- 82	+ 42	+ 218
83	+ 59	- 25	- 163	- 162	+ 69	+ 449
90	- 64	+ 19	+ 177	- 176	+ 50	+ 488
83	- 176	+ 16	+ 490	- 102	+ 9	+ 283
48	- 275	- 22	+ 576	+ 38	+ 4	- 102
07	- 147	- 33	+ 347	+ 175	+ 40	- 414
81	- 142	- 296	+ 474	+ 427	+ 29	+ 355
01	0	0	0	+ 246	+ 63	- 501
35	+ 167	+ 37	- 298	+ 199	+ 44	- 355
28	+ 258	+ 55	- 421	+ 45	+ 10	- 74
02	+ 227	+ 55	- 350	- 131	- 32	+ 202
62	+ 91	+ 29	- 123	- 249	- 81	+ 338
49	- 93	- 33	+ 97	- 255	- 90	+ 267
18	- 231	- 46	+ 169	- 134	- 27	+ 98
29	- 246	+ 14	+ 165	+ 43	- 2	- 29
90	- 149 <sub>333</sub>	+ 43 <sub>+154</sub>	+ 130 <sub>-631</sub>	+ 167 <sub>-69</sub>	- 51 <sub>-166</sub>	- 155 <sub>-209</sub>
43	- 109	- 122	- 157	- 42	- 137	+ 146



Tengyrsut. herman pruiter

1908(I)

$$a = -307,33$$

$$b = +42,96$$

$$c = -17,86$$

$$a = 316,57 \quad 1908$$

$$b = +59,54$$

$$c = +23,46$$

11,5103/23

$$179,05 + 2,15$$

$$172,62 - 9,62$$

$$262,20 - 55,40$$

$$229,95 - 14,55$$

$$276,37 + 20,92$$

$$241,12 - 38,93$$

$$254,42 + 38,57$$

$$25,57 - 5,51$$

Libra nappant  
mag 685,205

Régi X. egyenlet

$$1) 181,8 = -0,6997a - 0,7143b + 0,0036c \quad +1,70 \quad +180,10$$

$$3) 163,0 = -0,4981a + 0,5233b - 0,6915c \quad -21,92 \quad +184,92$$

$$4) 206,8 = -0,8219a - 0,1792b + 0,5407c \quad -23,50 \quad 230,30$$

$$5) 215,4 = -0,8355a - 0,4642b - 0,2941c \quad -22,67 \quad 237,07$$

$$6) 297,3 = -0,7849a + 0,5670b - 0,2500c \quad +31,96 \quad 265,34$$

$$7) 202,2 = -0,6001a + 0,7342b + 0,3174c \quad -4,50 \quad 206,70$$

$$8) 293,0 = -0,8438a - 0,0020b - 0,5360c \quad -29,26 \quad 263,74$$

$$9) 20,0 = +0,7071b - 0,7071c \quad -23,01 \quad 43,01$$

Normál egyenlet

Libra nappant  
mag 393,208

1,3, 4,5 6 7 8 9 bit

$$+3,7995a - 0,1097b + 0,6012c + 1160,2558 = 0$$

$$-0,1097a + 2,3921b - 0,7326c - 148,9711 = 0$$

$$+0,6012a - 0,7326b + 1,8077c + 244,9290 = 0$$

eredet

$$a = -307,33$$

$$b = +42,96$$

$$c = -17,86$$

Normál egyenlet 1,3, 4, 6, 7, 8, 9 bit

$$+3,1014a - 0,4975b + 0,3555c + 980,2891 = 0$$

$$-0,4975a + 2,2766b - 0,8691c - 248,9598 = 0$$

$$+0,3555a - 0,8691b + 1,7212c + 187,5799 = 0$$

$$a = -307,96$$

$$b = +32,29$$

$$c = -25,58$$



$\left( \frac{\partial Z}{\partial \varphi} \cos \delta + \frac{\partial Z}{\partial \lambda} \frac{\sin \delta}{\cos \varphi} \right)$  értéke is diaméterre egyenlő.  
 régi egyenletek ugyanazon helyzetben mint az előző oldalon.

$$\frac{\partial Z}{\partial \varphi} \cos \delta + \frac{\partial Z}{\partial \lambda} \frac{\sin \delta}{\cos \varphi} = -2 \cos \varphi \cos \delta a + 2 (\sin \varphi \cos \delta - \cos \varphi \sin \delta) b - 2 (\cos \varphi \sin \delta + \sin \varphi \cos \delta) c$$

	$\varphi$	$\lambda$	$\frac{\partial Z}{\partial \varphi}$	$\frac{\partial Z}{\partial \lambda}$	$\delta$	$\frac{\partial Z}{\partial \varphi} \cos \delta + \frac{\partial Z}{\partial \lambda} \frac{\sin \delta}{\cos \varphi}$
1	+40°	-125°	+543	+186	-24°	+397
3	+5°	-50°	+662	+25	-60°	+309
4	-20°	-40°	+395	-28	+29°	+331
5	-5°	+40°	+622	-37	+33°	+502
6	+25°	+120°	+742	-65	+30°	+607
7	+50°	+140°	+449	-186	+21°	+315
8	-30°	+155°	+600	+162	+13°	+627
9	-10°	+135°	+847	+38	+90°	+39

- 1) +397 = -1,3994 a - 1,4286 b + 0,0072 c
- 3) +309 = -0,9962 a + 1,0466 b - 1,3828 c
- 4) +331 = -1,6438 a - 0,3582 b + 1,0814 c
- 5) +502 = -1,6710 a - 0,9284 b - 0,5882 c
- 6) +607 = -1,5698 a + 1,1340 b - 0,5000 c
- 7) +315 = -1,2002 a + 1,4684 b + 0,6348 c
- 8) +627 = -1,6876 a - 0,0040 b - 1,0732 c
- 9) +39 = +1,4142 b - 1,4142 c

Normált egyenletek:

$$+15,1978 a - 0,4390 b + 2,4068 c + 4635,3842 = 0$$

$$-0,4390 a + 9,5687 b - 2,9294 c - 375,1540 = 0$$

$$+2,4068 a - 2,9294 b + 7,2324 c + 1193,3480 = 0$$

$$a = -294,61 \quad b = +5,93 \quad c = -64,56$$



$$\frac{\partial \delta}{\partial \varphi} = \frac{\frac{\partial^2}{\partial \varphi^2} - 2X}{2y - \frac{\partial^2}{\partial \lambda^2} \cos \varphi} \text{ formális számítás } \delta \text{ kiel:}$$

$$\mathcal{T} = X_{\cos \delta} + Y_{\sin \delta}$$

	$\varphi$	$\lambda$	$X$	$Y$	$\delta$	$\mathcal{T}$
1	+40	-125	+232	+74	-39°45'	+131,1
3	+5	-50	+300	-15	-50°2'	+204,2
4	-20	-40	+257	-37	+49°8'	+140,2
5	-50	+40	+286	-45	-43°20'	+238,9
6	+25	+120	+345	-3	+38°13'	+269,1
7	+50	+140	+227	-27	-1°13'	+227,6
8	-30	+155	+290	+48	-12°22'	+272,9
9	-10	+135	+370	+20	+89°26'	+23,7

$$\mathcal{T} = -a \cos \varphi \cos \delta + b (\sin \varphi \cos \delta - \cos \lambda \sin \delta) - c (\sin \varphi \sin \delta + \sin \lambda \sin \delta)$$

$$a = -311,7, b = +51,23, c = -4,25$$

- 1) +131,1 = -0,5890 a - 0,7716 b - 0,2404 c → +145,1
- 3) +204,2 = -0,6400 a + 0,4497 b - 0,6231 c → +225,2
- 4) +140,2 = -0,6148 a - 0,4353 b + 0,6575 c → +166,5
- 5) +238,9 = -0,7246 a + 0,4848 b + 0,4897 c → +242,6
- 6) +269,1 = -0,7121 a + 0,5969 b - 0,3698 c → +254,1
- 7) +227,6 = -0,6427 a + 0,4760 b + 0,6003 c → +224,2
- 8) +272,9 = -0,8459 a - 0,4004 b - 0,3521 c → +244,7
- 9) +23,7 = -0,0097 a + 0,7059 b - 0,7083 c → +42,2

5 ön kiképzésű Normal egyenletek:

$$\begin{aligned} +2,7703 a + 0,0352 b + 0,3184 c + 863,0811 &= 0 \\ +0,0352 a + 2,2286 b - 0,6749 c - 106,0668 &= 0 \\ +0,3184 a - 0,6749 b + 2,0013 c + 142,3316 &= 0 \end{aligned}$$

$$a = -311,70 \quad b = +51,23 \quad c = -4,25$$



$$a = -307,30$$

$$b = +42,96$$

$$c = -17,86$$

1908(I)

$\angle$	$= -2a \sin \varphi$	$-2b \cos \varphi \sin d$	$+2c \cos \varphi \cos d$
$\varphi = -60$	$+521,90$	$-42,96 \sin d$	$-17,86 \cos d$
$-40$	$-387,39$	$-65,81 \sin d$	$-27,36 \cos d$
$-20$	$-206,11$	$-80,74 \sin d$	$-33,57 \cos d$
$0$	$0$	$-85,92 \sin d$	$-35,72 \cos d$
$+20$	$+206,11$	$-80,74 \sin d$	$-33,57 \cos d$
$+40$	$+387,39$	$-65,81 \sin d$	$-27,36 \cos d$
$+60$	$+521,90$	$-42,96 \sin d$	$-17,86 \cos d$

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	$\varphi = -60^\circ$				$\varphi = -40^\circ$				$\varphi = -20^\circ$				$\varphi = 0^\circ$				
$0^\circ$	-522	0	-18	-540 +170	-387	0	-27	-414 +156	-206	0	-34	-240 +70	0	0	-36	-36	-5 +206
$10^\circ$	-7	-18	-547 +157		-11	-27	-425 +137		-14	-34	-254 +42		-15	-36	-50	-37	
$20^\circ$	-15	-17	-554 +147		-23	-26	-436 +116		-28	-32	-266 +20		-29	-34	-63	-57	
$30^\circ$	-21	-15	-558 +131		-33	-24	-444 +97		-40	-29	-275 -10		-43	-31	-74	-59	
$40^\circ$	-28	-14	-564 +114		-42	-21	-450 +72		-52	-26	-284 -36		-55	-27	-82	-55	
$50^\circ$	-33	-11	-566 +97		-50	-18	-455 +48		-62	-22	-290 -46		-66	-23	-89	-49	
$60^\circ$	-37	-9	-568 +77		-57	-14	-458 +23		-70	-17	-293 -55		-74	-18	-92	-44	
$70^\circ$	-40	-6	-568 +54		-62	-9	-458 -1		-76	-11	-293 -63		-81	-12	-93	-41	
$80^\circ$	-42	-3	-567 +28		-65	-5	-457 -22		-80	-6	-292 -70		-85	-6	-91	-40	
$90^\circ$	-43	0	-565 -10		-66	0	-453 -45		-81	0	-287 -82		-86	0	-86	-40	
$100^\circ$	-42	+3	-561 -41		-65	+5	-447 -72		-80	+6	-280 -95		-85	+6	-79	-37	
$110^\circ$	-40	+6	-556 -76		-62	+9	-440 -102		-76	+11	-271 -102		-81	+12	-69	-32	
$120^\circ$	-37	+9	-550 -97		-57	+14	-430 -136		-70	+17	-259 -129		-74	+18	-56	-34	
$130^\circ$	-33	+11	-544 -106		-50	+18	-419 -172		-62	+22	-246 -143		-66	+23	-43	-43	
$140^\circ$	-28	+14	-536 -119		-42	+21	-408 -177		-52	+26	-232 -152		-55	+27	-28	-54	
$150^\circ$	-21	+15	-528 -100		-33	+24	-396 -169		-40	+29	-217 -146		-43	+31	-12	-65	
$160^\circ$	-15	+17	-520 -109		-23	+26	-384 -156		-28	+32	-202 -133		-29	+34	+5	-68	
$170^\circ$	-7	+18	-511 -127		-11	+27	-371 -154		-14	+34	-186 -125		-15	+35	+20	-63	
$180^\circ$	0	+18	-504 -135		0	+27	-360 -141		0	+34	-172 -115		0	+36	+36	-57	
$190^\circ$	+7	+18	-497 -139		+11	+27	-349 -132		+14	+34	-158 -105		+15	+35	+50	-54	
$200^\circ$	+15	+17	-490 -143		+23	+26	-338 -125		+28	+32	-146 -100		+29	+34	+63	-58	
$210^\circ$	+21	+15	-486 -144		+33	+24	-330 -113		+40	+29	-137 -97		+43	+31	+74	-64	
$220^\circ$	+28	+14	-480 -145		+42	+21	-324 -104		+52	+26	-128 -99		+55	+27	+82	-68	
$230^\circ$	+33	+11	-478 -145		+50	+18	-319 -97		+62	+22	-122 -95		+66	+23	+89	-71	
$240^\circ$	+37	+9	-476 -130		+57	+14	-316 -88		+70	+17	-119 -86		+74	+18	+92	-67	
$250^\circ$	+40	+6	-476 -112		+62	+9	-316 -71		+76	+11	-119 -68		+81	+12	+93	-58	
$260^\circ$	+42	+3	-477 -84		+65	+5	-317 -43		+80	+6	-120 -43		+85	+6	+91	-39	
$270^\circ$	+43	0	-479 -43		+66	0	-321 -3		+81	0	-125 -11		+86	0	+86	-13	
$280^\circ$	+42	-3	-480 +7		+65	-5	-327 +43		+80	-6	-132 +24		+85	-6	+79	+16	
$290^\circ$	+40	-6	-488 +63		+62	-9	-334 +99		+76	-11	-141 +64		+81	-12	+69	+46	
$300^\circ$	+37	-9	-494 +114		+57	-14	-344 +149		+70	-17	-153 +101		+74	-18	+56	+77	
$310^\circ$	+33	-11	-500 +147		+50	-18	-355 +182		+62	-22	-166 +130		+66	-23	+43	+105	
$320^\circ$	+28	-14	-508 +167		+42	-21	-366 +198		+52	-26	-180 +145		+55	-27	+28	+112	
$330^\circ$	+21	-15	-516 +172		+33	-24	-378 +198		+40	-29	-195 +147		+43	-31	+12	+102	
$340^\circ$	+15	-17	-524 +174		+23	-26	-390 +188		+28	-32	-210 +134		+29	-34	-5	+72	
$350^\circ$	+7	-18	-533 +174		+11	-27	-403 +173		+14	-34	-226 +105		+15	-35	-20	+30	

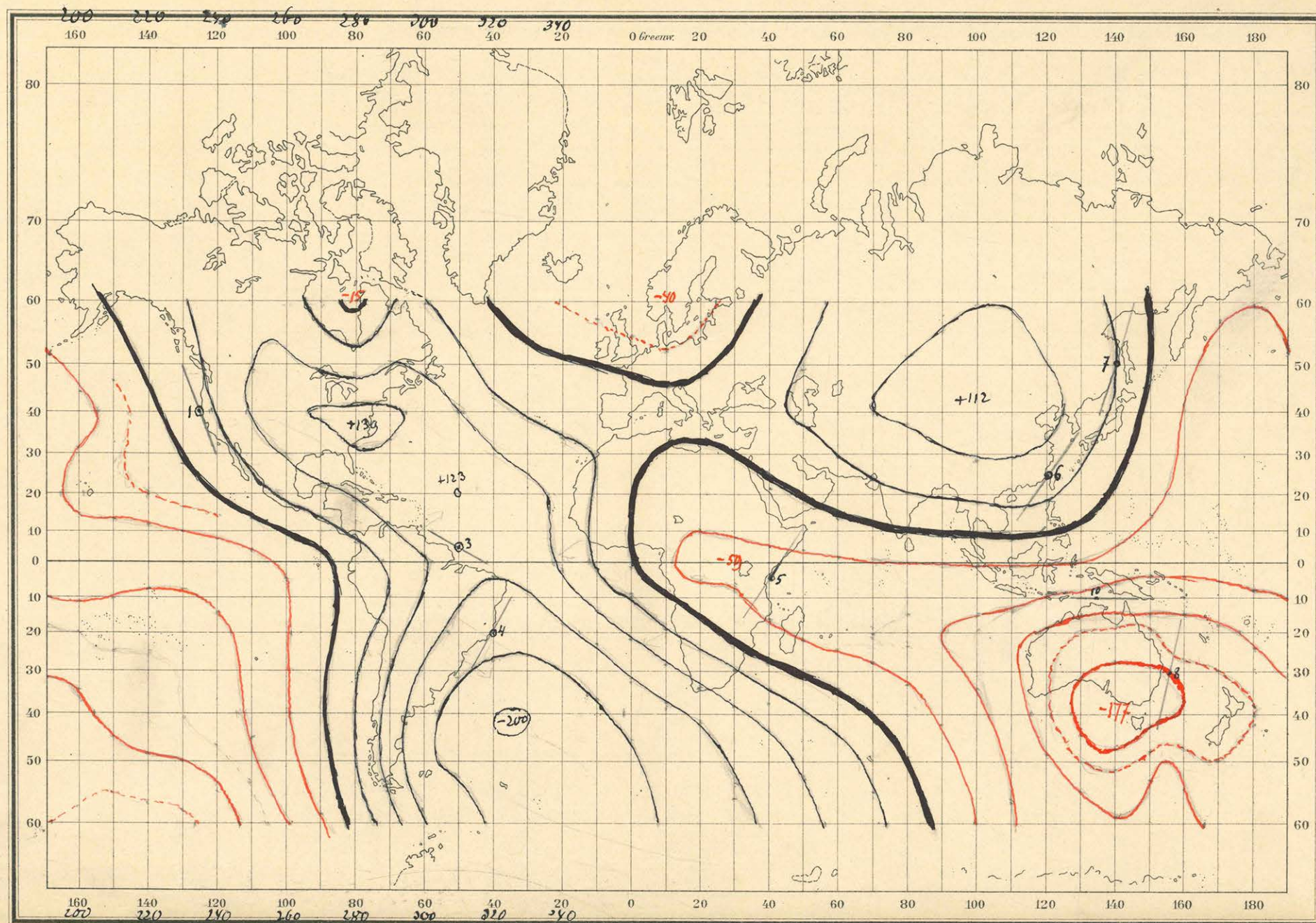


$\varphi = +20^\circ$						$\varphi = +40^\circ$						$\varphi = +60^\circ$					
6	-5	+206	0	-34	+172	+2	+387	0	-27	+360	+15	+522	0	-18	+504	-38	
70	-37				+158	-19				+349	+13				+497	-39	
63	-57				+146	-22				+338	+11				+490	-26	
74	-59				+137	-15				+330	+17				+486	-11	
82	-55				+128	-2				+324	+32				+480	+10	
89	-49				+122	+9				+319	+47				+478	+31	
92	-44				+119	+18				+316	+64				+476	+47	
93	-41				+119	+28				+316	+81				+476	+59	
91	-40				+120	+40				+317	+94				+477	+69	
6	-40				+125	+48				+321	+104				+479	+72	
79	-37				+132	+55				+327	+112				+483	+77	
69	-32				+141	+57				+334	+109				+488	+75	
56	-34				+153	+46				+344	+93				+494	+66	
43	-43				+166	+27				+355	+63				+500	+52	
28	-54				+180	-1				+366	+25				+508	+31	
2	-65				+195	-29				+378	-13				+516	-4	
5	-68				+210	-50				+390	-42				+524	-29	
20	-63				+226	-59				+403	-59				+533	-37	
36	-57				+240	-54				+414	-63				+540	-39	
50	-54				+254	-46				+425	-58				+547	-29	
63	-58				+266	-31				+436	-48				+554	-13	
74	-64				+275	-27				+444	-30				+558	+5	
82	-68				+284	-20				+450	-6				+564	+17	
89	-71				+290	-10				+455	+19				+566	+38	
92	-67				+293	+5				+458	+49				+568	+64	
93	-55				+293	+27				+458	+87				+568	+70	
91	-39				+292	+48				+457	+110				+567	+62	
86	-13				+287	+68				+453	+123				+565	+79	
79	+16				+280	+90				+447	+139				+561	-15	
69	+46				+271	+103				+440	+127				+556	+36	
56	+77				+259	+117				+430	+104				+550	+39	
43	+105				+246	+123				+419	+81				+544	+17	
28	+112				+232	+115				+408	+49				+536	-2	
12	+102				+217	+97				+396	+35				+528	-15	
5	+72				+202	+66				+384	+27				+520	-21	
0	+30				+186	+34				+371	+20				+511	-29	



1908(I)

L





Ms 5103 / 24

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1908(II)

$$a = -320,13$$

$$b = +42,73$$

$$c = +9,07$$

$Z =$	$-2 \sin y$	$-26 \cos y \sin d$	$+2 \cos y \cos d$
$\varphi = -60$	$-554,47$	$-42,73 \sin d$	$+9,07 \cos d$
$-40$	$-411,56$	$-65,46$	$+13,90 \sin d$
$-20$	$-218,97$	$-80,31$	$+17,05 \sin d$
$0$	$0$	$-85,46$	$+18,14 \sin d$
$+20$	$+218,97$	$-80,31$	$+17,05 \sin d$
$+40$	$+411,56$	$-65,46$	$+13,90 \sin d$
$+60$	$+554,47$	$-42,73$	$+9,07 \sin d$



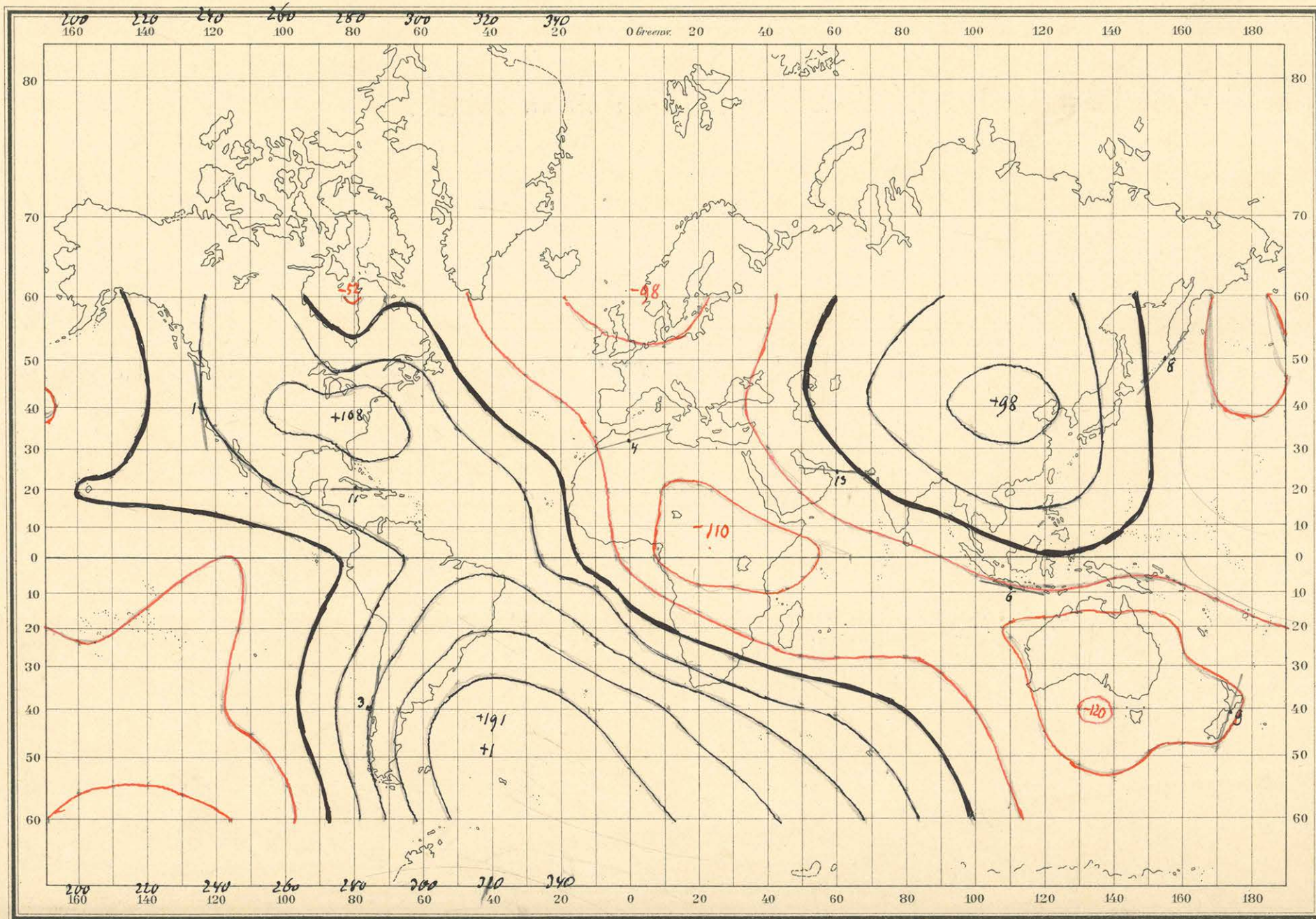
$\lambda$	$\varphi = -60^\circ$				$\varphi = -40^\circ$				$\varphi = -20^\circ$				$\varphi = 0$			
$0^\circ$	-554	0	+9	-545 +175	-412	0	+14	-398 +140	-219	0	+17	-202 +32	0	0	+18	+18 -59 +219
$10^\circ$	-7	+9	-552	+162	-11	+14	-409	+121	-14	+17	-216	+4	-15	+18	+3	-90
$20^\circ$	-15	+9	-560	+153	-22	+13	-421	+104	-27	+16	-230	-16	-29	+17	-12	-108
$30^\circ$	-21	+8	-567	+140	-33	+12	-433	+86	-40	+15	-244	-40	-43	+16	-27	-106
$40^\circ$	-27	+7	-574	+124	-42	+11	-443	+65	-52	+13	-258	-60	-55	+14	-41	-96
$50^\circ$	-33	+6	-581	+112	-50	+9	-453	+46	-62	+11	-270	-66	-65	+12	-53	-85
$60^\circ$	-37	+5	-586	+95	-57	+7	-462	+27	-70	+9	-280	-68	-74	+9	-65	-71
$70^\circ$	-40	+3	-591	+77	-62	+5	-469	+10	-75	+6	-288	-69	-80	+6	-72	-62
$80^\circ$	-42	+2	-594	+55	-64	+2	-474	-5	-79	+3	-295	-67	-84	+3	-81	-50
$90^\circ$	-43	0	-597	+22	-65	0	-477	-21	-80	0	-299	-70	-85	0	-85	-41
$100^\circ$	-42	-2	-598	-4	-64	-2	-478	-41	-79	-3	-301	-74	-84	-3	-87	-29
$110^\circ$	-40	-3	-597	-35	-62	-5	-479	-63	-75	-6	-300	-83	-80	-6	-86	-15
$120^\circ$	-37	-5	-596	-51	-57	-7	-476	-90	-70	-9	-298	-90	-74	-9	-83	-7
$130^\circ$	-33	-6	-593	-57	-50	-9	-471	-120	-62	-11	-292	-97	-65	-12	-77	-9
$140^\circ$	-27	-7	-588	-67	-42	-11	-465	-120	-52	-13	-284	-100	-55	-14	-69	-13
$150^\circ$	-21	-8	-583	-45	-33	-12	-457	-108	-40	-15	-274	-89	-43	-16	-59	-16
$160^\circ$	-15	-9	-578	-51	-22	-13	-447	-93	-27	-16	-262	-73	-29	-17	-46	-17
$170^\circ$	-7	-9	-570	-68	-11	-14	-437	-88	-14	-17	-250	-61	-15	-18	-33	-10
$180^\circ$	0	-9	-563	-76	0	-14	-426	-75	0	-17	-236	-51	0	-18	-18	-3
$190^\circ$	+7	-9	-556	-80	+11	-14	-415	-67	+14	-17	-222	-41	+15	-18	-3	-1
$200^\circ$	+15	-9	-548	-85	+22	-13	-403	-60	+27	-16	-208	-36	+29	-17	+12	-7
$210^\circ$	+21	-8	-541	-89	+33	-12	-391	-52	+40	-15	-194	-40	+43	-16	+27	-17
$220^\circ$	+27	-7	-534	-91	+42	-11	-381	-47	+52	-13	-180	-47	+55	-14	+41	-27
$230^\circ$	+33	-6	-527	-96	+50	-9	-371	-45	+62	-11	-168	-49	+65	-12	+53	-35
$240^\circ$	+37	-5	-522	-84	+57	-7	-362	-42	+70	-9	-158	-47	+74	-9	+65	-40
$250^\circ$	+40	-3	-517	-71	+62	-5	-355	-32	+75	-6	-150	-37	+80	-6	+72	-34
$260^\circ$	+42	-2	-514	-47	+64	-2	-350	-10	+79	-3	-143	-20	+84	-3	+81	-29
$270^\circ$	+43	0	-511	-11	+65	0	-347	+23	+80	0	-139	+3	+85	0	+85	-12
$280^\circ$	+42	+2	-510	+34	+64	+2	-346	+62	+79	+3	-137	+29	+84	+3	+87	+8
$290^\circ$	+40	+3	-511	+85	+62	+5	-345	+110	+75	+6	-138	+61	+80	+6	+86	+29
$300^\circ$	+37	+5	-512	+132	+57	+7	-348	+153	+70	+9	-140	+88	+74	+9	+83	+50
$310^\circ$	+33	+6	-515	+164	+50	+9	-353	+180	+62	+11	-146	+110	+65	+12	+77	+71
$320^\circ$	+27	+7	-520	+179	+42	+11	-359	+191	+52	+13	-154	+119	+55	+14	+69	+71
$330^\circ$	+21	+8	-525	+182	+33	+12	-367	+187	+40	+15	-164	+116	+43	+16	+59	+55
$340^\circ$	+15	+9	-530	+180	+22	+13	-377	+175	+27	+16	-176	+100	+29	+17	+46	+21
$350^\circ$	+7	+9	-538	+179	+11	+14	-387	+157	+14	+17	-188	+67	+15	+18	+33	-23



	$\varphi = +20^\circ$					$\varphi = +40^\circ$					$\varphi = +60^\circ$				
-59	+219	0	+17	+236	-62	+412	0	+14	+426	-51	+554	0	+9	+563	+97
-90		-14	+17	+222	-83		-11	+14	+415	-53		-7	+9	+556	-98
-108				+208	-84				+403	-54				+548	-84
-106				+194	-72				+391	-44				+541	-66
-96				+180	-54				+387	-25				+534	-44
-85				+168	-37				+371	-5				+527	-18
-71				+158	-21				+362	+18				+522	+1
-62				+150	-3				+355	+42				+517	+18
-50				+143	+17				+350	+61				+514	+32
-41				+139	+34				+347	+78				+511	+40
-29				+137	+50				+346	+93				+510	+50
-15				+138	+60				+345	+98				+511	+52
-7				+140	+59				+348	+89				+512	+48
-9				+146	+47				+353	+65				+515	+37
-13				+154	+25				+359	+32				+520	+19
-16				+164	+2				+367	-2				+525	-13
-17				+176	-16				+377	-29				+530	-35
-10				+188	-21				+387	-43				+538	-42
-3				+202	-16				+398	-45				+545	-44
-1				+216	-8				+409	-42				+552	-34
-7				+230	+1				+421	-33				+560	-20
-17				+244	+4				+433	-19				+567	-4
-27				+258	+6				+443	+1				+574	+7
-35				+270	+10				+453	+21				+581	+23
-40				+280	+18				+462	+45				+586	+47
-34				+288	+32				+469	+72				+591	+47
-29				+293	+45				+474	+93				+594	+35
-12				+299	+55				+477	+99				+597	+25
+8				+301	+69				+478	+108				+598	-52
+29				+300	+74				+479	+88				+597	-5
+50				+298	+78				+476	+58				+596	-7
+71				+292	+77				+471	+29				+593	-32
+71				+284	+63				+465	-8				+588	-54
+55				274	+40				+457	-26				+583	-70
+21				262	+6				+447	-36				+578	-79
-23				+250	-30				+437	-46				+570	-88



1908(II)  
2





Ms. 5103 / 25  
 $\varphi = +20$

VIII. Táblák a III. táblából  $\mu_a = 313,9$  helyettesítéssel.

$Z_{s.VIII} - Z_{s.III} = -45,8 \text{ mm}$

$\varphi$	
-60	+39,7
-40	+29,4
-20	+15,7
0	0
+20	-15,7
+40	-29,4
+60	-39,7

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$\phi = +20$

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350



$Z_1$	$Z_2$
+174	+172
+139	+142
+125	+108
+123	+96
+126	+82
+131	+74
+137	+73
+146	+78
+160	+89
+173	+105
+187	+123
+197	+142
+199	+161
+192	+176
+179	+190
+166	+202
+160	+210
+167	+216
+186	+220
+208	+224
+231	+230
+248	+236
+265	+244
+280	+254
+298	+265
+320	+278
+340	+291
+355	+301
+370	+309
+374	+310
+376	+305
+313*	+296
+347	+280
+262*	+258
+268	+232
+220	+202

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# VIII Táblák.

7

a III. és IV. táblákban  $\mu_0 = -0.13, 9$

$\varphi$	$z_{IV} - z_{III} = -45,8 \text{ mm}$
-60	+40
-40	+30
-20	+16
0	0
+20	-16
+40	-30
+60	-40

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KÖNYVTÁRA



[illegible]



+40	+60	-60	-40	-20	0	+20	+40	+60	
		+82	+67	+6	-32	+2	+18	-58	
		+81	+68	0	-42	-3	+24	-56	
		+83	+67	-1	-43	+17	+32	-42	
		+82	+65	-6	-28	+27	+40	-24	
		+77	+61	-14	-9	+44	+56	-9	
		+76	+54	-11	+4	+57	+68	0	
		+70	+44	-8	+14	+54	+77	+19	
		+59	+35	-7	+19	+68	+86	+24	
		+45	+25	-9	+16	+71	+86	+26	
		+15	+12	-7	+12	+68	+85	+27	
		-4	-8	-27	+9	+64	+79	+16	
		-29	-29	-43	+10	+55	+69	+7	
		-40	-55	-54	+5	+38	+40	-70	
		-45	-82	-62	-1	+16	+6	-28	
		-52	-80	-65	-9	-11	-35	-52	
		-27*	-64	-53	-12	-36	-72	-87	
		-43	-46	-30	-8	-50	-97	-111	
		-49	-38	-73	+9	-49	-107	-114	
		-59	-24	+3	+24	-34	-104	-115	
		-67	-17	+17	+33	-16	-90	-100	
		-77	-15	+20	+34	+1	-73	-79	
		-89	-12	+15	+27	+12	-47	-58	
		-99	-26	+2	+16	+21	-22	-40	
		-116	-31	-15	+2	+26	+5	-17	
		-117	-45	-25	-11	+33	+34	+14	
		-118	-55	-35	-27	+42	+64	+18	
		-109	-53	-38	-29	+49	+87	+13	
		-86	-51	-36	-27	+54	+95	-39*	
		-54	-21	-29	-19	+61	+106	+12 <sup>Jan</sup>	
		-13	+14	-71	-10	+64	+92	-10	
		+25	+44	+6	+7	+71	+67	-3	
		+50	+64	+22	+27	+17*	+45	-22	
		+64	+78	+34	+33	+67	+17	-39	
		+69	+75	+40	+27	+4*	+9	-49	
		+72	+72	+35	+8	+36	+10	-49	
		+76	+76	+21	-16	+18	+11	-54	

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III. Táblák.

$q = -60$

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KÖNYVTÁRA



$\varphi = -60$

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350



$z_t$	$z_0$
-370	-452
-390	-471
-407	-490
-428	-510
-450	-527
-469	-545
-491	-561
-513	-572
-539	-584
-575	-592
-602	-598
-631	-602
-645	-605
-650	-605
-655	-603
-627*	-600
-639	-596
-638	-589
-639	-580
-636	-569
-633	-556
-637	-542
-624	-525
-623	-507
-606	-489
-588	-470
-561	-452
-522	-436
-476	-422
-425	-412
-380	-405
-353	-403
-341	-405
-343	-412
-350	-422
-359	-435



III. Táblák.

$\varphi = -40$

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



$q = -40$

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

-2



$Z_t$	$Z_0$
-258	-325
-287	-355
-317	-384
-348	-413
-378	-439
-407	-461
-435	-479
-458	-493
-478	-503
-497	-509
-519	-511
-542	-513
-566	-511
-591	-509
-585	-505
-565	-501
-540	-494
-525	-487
-501	-477
-482	-465
-463	-448
-443	-437
-428	-412
-416	-385
-404	-359
-388	-333
-360	-307
-334	-283
-284	-263
-235	-249
-195	-239
-173	-237
-168	-246
-180	-255
-202	-274
-230	-306

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



VII. Táblák.

$\varphi = -20$

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



$\phi = -20$

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350



$Z_t$      $Z_s$

-170	-176
-212	-212
-246	-245
-284	-278
-317	-303
-336	-325
-348	-340
-357	-350
-362	-353
-369	-362
-375	-347
-383	-340
-388	-334
-389	-327
-384	-319
-364	-311
-335	-305
-311	-298
-287	-290
-263	-280
-247	-267
-234	-249
-227	-229
-217	-202
-205	-180
-187	-152
-163	-125
-136	-100
-108	-79
-77	-66
-52	-58
-37	-59
-35	-69
-48	-88
-76	-111
-121	-142

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



VIII. Táblal.

$\varphi = 0$

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



$q=0$

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350



$Z_t$	$Z_s$
-------	-------

-41	-9
-----	----

-86	-44
-----	-----

-120	-77
------	-----

-133	-105
------	------

-137	-128
------	------

-138	-142
------	------

-136	-150
------	------

-134	-153
------	------

-131	-147
------	------

-126	-138
------	------

-116	-125
------	------

-101	-111
------	------

-91	-96
-----	-----

-85	-84
-----	-----

-83	-74
-----	-----

-77	-65
-----	-----

-63	-57
-----	-----

-43	-52
-----	-----

-21	-45
-----	-----

-5	-38
----	-----

+5	-29
----	-----

+10	-17
-----	-----

+14	-2
-----	----

+18	+16
-----	-----

+25	+36
-----	-----

+38	+59
-----	-----

+52	+81
-----	-----

+73	+100
-----	------

+96	+115
-----	------

+115	+125
------	------

+133	+126
------	------

+148	+127
------	------

+141	+108
------	------

+114	+87
------	-----

+67	+59
-----	-----

+10	+26
-----	-----

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



$$Z_{st} = +1,2856 \underline{a} + 1,1720 \underline{b} + 0,9848 \underline{c} - 1,1316 \underline{e} - 0,8656 \underline{f} - 0,9495 \underline{g} - 0,1526 \underline{i} - 0,2420 \underline{k}$$

$$Z'_{st} = +0,3472 \underline{a} + 0,9848 \underline{b} + 1,7057 \underline{c} - 0,2565 \underline{e} - 1,2598 \underline{f} - 0,4443 \underline{g} + 0,7274 \underline{i} + 0,9094 \underline{k}$$



M, 5103 / 26  
Schmidt 12.11.11

Schmidt 12.11.11

	$\varphi$	$\lambda$	$Z_t$		$\varphi'$	$\lambda'$	$Z'_t$
1.)	+20°	+112°	+199	1')	+30°	+124°	+322
2.)	-40°	+150°	-565	2')	-25°	+156°	-414
3.)	-3°	+145°	-130	3')	0°	+130°	-86
4.)	-35°	+110°	-508	4')	-20°	+110°	-383
5.)	+20°	-18°	+259	5')	+34°	-10°	+357
6.)	+30°	-80°	+501	6')	+45°	-60°	+565
7.)	0°	-40°	+140	7')	+10°	-60°	+254
8.)	-30°	-48°	-98	8')	-15°	-38°	-1
9.)	-40°	-50°	-173	9')	-10°	-30°	+22

$$Z_{st} = -0,6840 \underline{a} - 1,6426 \underline{b} - 0,7040 \underline{c} - 0,8940 \underline{e} - 0,9201 \underline{f} - 0,2408 \underline{g} - 0,9527 \underline{i} + 0,6490 \underline{k}$$

$$Z'_{st} = -1,0000 \underline{a} - 1,4358 \underline{b} - 0,9685 \underline{c} - 1,0769 \underline{e} - 1,0994 \underline{f} - 0,7265 \underline{g} - 0,4214 \underline{i} + 0,2500 \underline{k}$$

$$Z_{st} = +1,2856 \underline{a} - 0,7660 \underline{b} - 1,3267 \underline{c} + 0,7386 \underline{e} - 0,7623 \underline{f} + 1,2792 \underline{g} + 0,4401 \underline{i} - 0,2396 \underline{k}$$

$$Z'_{st} = +0,8452 \underline{a} - 0,7372 \underline{b} - 1,6558 \underline{c} + 0,4673 \underline{e} - 0,9156 \underline{f} + 1,0496 \underline{g} + 0,8244 \underline{i} + 0,4642 \underline{k}$$

$$Z_{st} = +0,1046 \underline{a} - 1,1456 \underline{b} - 1,6361 \underline{c} + 0,0899 \underline{e} - 1,4056 \underline{f} + 0,1284 \underline{g} + 0,5116 \underline{i} + 0,9916 \underline{k}$$

$$Z'_{st} = -1,5320 \underline{b} - 1,2856 \underline{c} - 1,4772 \underline{f} - 0,2604 \underline{i} + 1,0000 \underline{k}$$

$$Z_{st} = +1,1472 \underline{a} - 1,5396 \underline{b} - 0,5603 \underline{c} + 1,3245 \underline{e} - 0,6471 \underline{f} + 0,4821 \underline{g} - 0,7711 \underline{i} + 0,0134 \underline{k}$$

$$Z'_{st} = +0,6840 \underline{a} - 1,7660 \underline{b} - 0,6428 \underline{c} + 0,9060 \underline{e} - 0,8514 \underline{f} + 0,3297 \underline{g} - 1,0146 \underline{i} + 0,6490 \underline{k}$$

$$Z_{st} = -0,6840 \underline{a} + 0,5807 \underline{b} + 1,7875 \underline{c} + 0,2079 \underline{e} - 0,7785 \underline{f} + 0,9171 \underline{g} + 1,0715 \underline{i} + 0,6490 \underline{k}$$

$$Z'_{st} = -1,1184 \underline{a} + 0,2878 \underline{b} + 1,6328 \underline{c} + 0,2415 \underline{e} - 0,3525 \underline{f} + 1,3697 \underline{g} + 0,9686 \underline{i} + 0,0616 \underline{k}$$

$$Z_{st} = -1,0000 \underline{a} + 1,7056 \underline{b} + 0,3006 \underline{c} + 1,2792 \underline{e} - 0,3848 \underline{f} + 0,2256 \underline{g} - 1,0572 \underline{i} + 0,2500 \underline{k}$$

$$Z'_{st} = -1,4142 \underline{a} + 1,2246 \underline{b} + 0,7071 \underline{c} + 1,2990 \underline{e} - 0,6495 \underline{f} + 0,7500 \underline{g} - 0,3750 \underline{i} - 0,5000 \underline{k}$$

$$Z_{st} = +1,2856 \underline{b} + 1,5320 \underline{c} - 1,4772 \underline{f} + 0,2604 \underline{i} + 1,0000 \underline{k}$$

$$Z'_{st} = -0,3472 \underline{a} + 1,7056 \underline{b} + 0,9848 \underline{c} + 0,4443 \underline{e} - 1,2598 \underline{f} + 0,2565 \underline{g} - 0,7274 \underline{i} + 0,9094 \underline{k}$$

$$Z_{st} = +1,0000 \underline{a} + 1,2870 \underline{b} + 1,1589 \underline{c} - 0,9643 \underline{e} - 1,1188 \underline{f} - 0,8691 \underline{g} - 0,1176 \underline{i} + 0,2500 \underline{k}$$

$$Z'_{st} = +0,5176 \underline{a} + 1,1888 \underline{b} + 1,5223 \underline{c} - 0,4616 \underline{e} - 1,3579 \underline{f} - 0,5910 \underline{g} + 0,3385 \underline{i} + 0,7990 \underline{k}$$



$z - z'$  egyenlő.

$$K = \frac{1}{2}(u + i)$$

- 1)  $+123 = -0,3160 \underline{a} + 0,2068 \underline{b} - 0,2645 \underline{c} - 0,1829 \underline{e} - 0,1793 \underline{f} - 0,4857 \underline{g} + 0,5313 \underline{i} - 0,3990 \underline{k}$  7)
- 2)  $+151 = -0,4404 \underline{a} + 0,0288 \underline{b} - 0,3291 \underline{c} - 0,2713 \underline{e} - 0,1533 \underline{f} - 0,2296 \underline{g} + 0,3843 \underline{i} + 0,7038 \underline{k}$  8)
- 3)  $+44 = -0,1046 \underline{a} - 0,3864 \underline{b} + 0,3505 \underline{c} - 0,0899 \underline{e} - 0,0716 \underline{f} - 0,1284 \underline{g} - 0,7720 \underline{i} + 0,0084 \underline{k}$
- 4)  $+125 = -0,4632 \underline{a} - 0,2264 \underline{b} - 0,0825 \underline{c} - 0,4185 \underline{e} - 0,2043 \underline{f} - 0,1524 \underline{g} - 0,2435 \underline{i} + 0,6356 \underline{k}$
- 5)  $+98 = -0,4344 \underline{a} - 0,2929 \underline{b} - 0,1547 \underline{c} + 0,0336 \underline{e} + 0,4260 \underline{f} + 0,4526 \underline{g} - 0,1029 \underline{i} - 0,5874 \underline{k}$
- 6)  $+64 = -0,4142 \underline{a} - 0,4810 \underline{b} + 0,4065 \underline{c} + 0,0198 \underline{e} - 0,2647 \underline{f} + 0,5244 \underline{g} + 0,6822 \underline{i} - 0,7500 \underline{k}$
- 7)  $+114 = -0,3472 \underline{a} + 0,4200 \underline{b} - 0,5472 \underline{c} + 0,4443 \underline{e} + 0,1674 \underline{f} + 0,2565 \underline{g} - 0,9878 \underline{i} - 0,0906 \underline{k}$
- 8)  $+97 = -0,4824 \underline{a} - 0,0982 \underline{b} + 0,3634 \underline{c} + 0,5027 \underline{e} - 0,2391 \underline{f} + 0,2781 \underline{g} + 0,4561 \underline{i} + 0,5490 \underline{k}$

próba

$$1) -K = +308,27 + 0,7920 \underline{a} - 0,5183 \underline{b} + 0,6629 \underline{c} + 0,4584 \underline{e} + 0,4494 \underline{f} + 1,2173 \underline{g} - 1,3013 \underline{i}$$

hívni meg (K) érték van benne és nem (-K)

- 2)  $0 = +65,96 + 0,1170 \underline{a} - 0,3360 \underline{b} + 0,1374 \underline{c} + 0,0513 \underline{e} + 0,1630 \underline{f} + 0,6271 \underline{g} - 0,5316 \underline{i}$
- 3)  $0 = -41,41 - 0,0979 \underline{a} - 0,3908 \underline{b} + 0,3561 \underline{c} - 0,0861 \underline{e} - 0,0678 \underline{f} - 0,1182 \underline{g} - 0,7829 \underline{i}$
- 4)  $0 = +70,94 + 0,0402 \underline{a} - 0,5558 \underline{b} + 0,3388 \underline{c} - 0,1271 \underline{e} + 0,0813 \underline{f} + 0,6213 \underline{g} - 1,0706 \underline{i}$
- 5)  $0 = -279,08 - 0,8996 \underline{a} + 0,0119 \underline{b} - 0,5441 \underline{c} - 0,2357 \underline{e} + 0,1620 \underline{f} - 0,2624 \underline{g} + 0,6615 \underline{i}$
- 6)  $0 = -295,20 - 1,0082 \underline{a} - 0,0923 \underline{b} - 0,0907 \underline{c} - 0,3240 \underline{e} - 0,6018 \underline{f} - 0,3886 \underline{g} + 1,6582 \underline{i}$
- 7)  $0 = -141,93 - 0,4190 \underline{a} + 0,4670 \underline{b} - 0,6073 \underline{c} + 0,4028 \underline{e} + 0,1267 \underline{f} + 0,1462 \underline{g} - 0,8699 \underline{i}$
- 8)  $0 = +72,24 - 0,0476 \underline{a} - 0,3827 \underline{b} + 0,7273 \underline{c} + 0,7544 \underline{e} + 0,0076 \underline{f} + 0,9464 \underline{g} - 0,2583 \underline{i}$

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- 2)  $\underline{i} = +124,07 + 0,2201 \underline{a} - 0,6320 \underline{b} + 0,2585 \underline{c} + 0,0965 \underline{e} + 0,3066 \underline{f} + 1,1796 \underline{g}$
- 3)  $0 = -138,54 - 0,2702 \underline{a} + 0,1040 \underline{b} + 0,1537 \underline{c} - 0,1616 \underline{e} - 0,3078 \underline{f} - 1,0417 \underline{g}$
- 4)  $0 = -61,89 - 0,1954 \underline{a} + 0,1308 \underline{b} + 0,0620 \underline{c} - 0,2304 \underline{e} - 0,2469 \underline{f} - 0,6416 \underline{g}$
- 5)  $0 = -197,01 - 0,7540 \underline{a} - 0,4066 \underline{b} - 0,3731 \underline{c} - 0,1719 \underline{e} + 0,3648 \underline{f} + 0,5179 \underline{g}$
- 6)  $0 = -89,47 - 0,6432 \underline{a} - 1,1403 \underline{b} + 0,3379 \underline{c} - 0,1640 \underline{e} - 0,0934 \underline{f} + 1,5674 \underline{g}$
- 7)  $0 = -249,86 - 0,6105 \underline{a} + 1,0168 \underline{b} - 0,8322 \underline{c} + 0,3189 \underline{e} - 0,1400 \underline{f} - 0,8799 \underline{g}$
- 8)  $0 = +40,19 - 0,1045 \underline{a} - 0,2195 \underline{b} + 0,6605 \underline{c} + 0,7295 \underline{e} - 0,0716 \underline{f} + 0,6417 \underline{g}$

$$3) \underline{g} = -132,99 - 0,2594 \underline{a} + 0,0998 \underline{b} + 0,1475 \underline{c} - 1,5513 \underline{e} - 0,2955 \underline{f}$$

- 4)  $0 = +23,44 - 0,0290 \underline{a} + 0,0568 \underline{b} - 0,0326 \underline{c} + 0,7649 \underline{e} - 0,0573 \underline{f}$
- 5)  $0 = -265,89 - 0,8883 \underline{a} - 0,3549 \underline{b} - 0,2967 \underline{c} - 0,9753 \underline{e} + 0,2118 \underline{f}$
- 6)  $0 = -297,92 - 1,0498 \underline{a} - 0,9839 \underline{b} + 0,5691 \underline{c} - 2,5955 \underline{e} - 0,5566 \underline{f}$



990k  
038k  
084k  
6356k  
5874k  
7500k  
0906k  
5490k



i  
i  
i  
i  
i  
i  
i  
i  
i  
i

79  
169  
99  
49  
99  
179

7)  $0 = -132,83 - 0,3823a + 0,9290b - 0,9620c + 1,6839e + 0,1200f$

8)  $0 = -45,16 - 0,2710a - 0,1555b + 0,7552c - 0,2660e - 0,2612f$

$f = +409,08 - 0,5061a + 0,9913b - 0,5689c + 13,3590e$

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$$6) \quad 0 = -89,47 - 0,6422a - 1,1403b + 0,3379c - 0,1640e - 0,0924f + 1,5674g \\
-208,45 - 0,4066a + 0,1564b + 0,2312c - 2,4315e - 0,4632f. \\
-297,92 - 1,0498a - 0,9839b + 0,5691c - 2,5955e - 0,5566f.$$

$$\begin{array}{r} +382,56 \\ -251 \\ \hline 973,56 \\ -111,73 \\ \hline 861,83 \end{array}$$

$$7) \quad 0 = -249,86 - 0,6105a + 1,0168b - 0,8322c + 0,3189e - 0,1400f - 0,8799g. \\
-117,03 - 0,2282a + 0,0878b + 0,1298c - 1,3650e - 0,2600f. \\
-132,83 - 0,3823a + 0,9290b - 0,9620c + 1,6839e + 0,1200f.$$

$$\begin{array}{r} -0,45 \\ -8,28 \end{array}$$

$$8) \quad 0 = +40,19 - 0,1045a - 0,2195b + 0,6605c + 0,7295e - 0,0716f + 0,6417g. \\
-85,35 - 0,1665a + 0,0640b + 0,0947c - 0,9955e - 0,1896f. \\
-45,16 - 0,2710a - 0,1555b + 0,7552c - 0,2660e - 0,2612f.$$

124,25m

$\begin{array}{r} 1,369958 \\ 0,758155-2 \\ \hline 2,611803 \\ 409,08 \end{array}$	$\begin{array}{r} a \\ 0,462398-2 \\ 0,758155-2 \\ \hline 0,704243-1 \\ 0,5061 \end{array}$	$\begin{array}{r} b \\ 0,754348-2 \\ 0,758155-2 \\ \hline 0,996193-1 \\ 0,9913 \end{array}$	$\begin{array}{r} c \\ 0,513218-2 \\ 0,758155-2 \\ \hline 0,755063-1 \\ 0,5689 \end{array}$	$\begin{array}{r} e \\ 0,882605-1 \\ 0,758155-2 \\ \hline 1,125450 \\ 13,3590 \end{array}$	$\begin{array}{r} + \\ 12,150 \\ 108,08 \\ \hline 120,23 \\ 9,91 \\ 9,91 \end{array}$
--	---	---	---	--	---

$$\begin{array}{r} -1563,20 \\ 608,68 \\ 6,06 \\ \hline 2177,97 \end{array}$$

$$\begin{array}{r} +407,20 \\ 0,49 \\ -0,06 \end{array}$$

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$$\begin{array}{r} 13,3590 \\ 278 \\ \hline 1519 \end{array}$$

$$\begin{array}{r} 19,90 \\ 0,19 \\ 4,15 \\ \hline 24,04 \\ +344,63 \\ \hline 368,67 \\ -9,50 \\ \hline 359,17 \end{array}$$

$$\begin{array}{r} +46,04 \\ 19,90 \\ 0,19 \\ 4,15 \\ \hline 24,04 \\ -4,00 \\ \hline 20,04 \end{array}$$

$$\begin{array}{r} 120,23 \\ 9,91 \\ \hline 130,14 \\ -34,47 \\ \hline 95,67 \\ -8,21 \\ \hline 87,46 \end{array}$$



123

	a	b	c	e	f	g	i
2,089905	0,499687-1	0,315551-1	0,422426-1	0,262214-1	0,253580-1	0,686368-1	0,725340-1
0,600973-1	0,600973-1	0,600973-1	0,600973-1	0,600973-1	0,600973-1	0,600973-1	0,600973-1
2,488932	0,898714-1	0,714578-1	0,821453-1	0,661241-1	0,652607-1	0,085395	0,124367
308,27	0,7920	0,5183	0,6629	0,4584	0,4494	1,2173	1,3013

96.25m

$$0 = -151,00 - 0,4404a + 0,0288b - 0,3291c - 0,2710e - 0,1500f - 0,2296g + 0,3840i + 0,7038k.$$

$$2) +216,96 + 0,5574a - 0,3648b + 0,4665c + 0,3226e + 0,3163f + 0,8567g - 0,9159i$$

$$+ 65,96 + 0,1170a - 0,3360b + 0,1374c + 0,0513e + 0,1630f + 0,6271g - 0,5316i$$

$$- 267,96 - 0,9978a + 0,3936b - 0,7956c - 0,5929e - 0,4696f - 1,0863g + 1,3002i$$

$$3) 0 = -44,00 - 0,1046a - 0,3864b + 0,3505c - 0,0899e - 0,0716f - 0,1284g - 0,7720i + 0,0084k.$$

$$+ 2,59 + 0,0067a - 0,0044b + 0,0056c + 0,0038e + 0,0038f + 0,0102g - 0,0109i$$

$$- 41,41 - 0,0919a - 0,3908b + 0,3561c - 0,0861e - 0,0678f - 0,1182g - 0,7829i$$

$$- 46,59 - 0,1113a - 0,3820b + 0,3449c - 0,0937e - 0,0754f - 0,1386g - 0,7611i$$

$$4) 0 = -125,00 - 0,4622a - 0,2264b - 0,0825c - 0,4185e - 0,2040f - 0,1524g - 0,2405i + 0,6056k.$$

$$+ 195,94 + 0,5034a - 0,3294b + 0,4213c + 0,2914e + 0,2856f + 0,7737g - 0,8271i$$

$$+ 70,94 + 0,0402a - 0,1030b + 0,3388c - 0,1271e + 0,0813f + 0,6213g - 0,5736i$$

$$- 320,94 - 0,9666a + 0,1030b - 0,5558b - 0,5038c - 0,7099e - 0,4899f - 0,9261g - 0,5836i$$

$$5) 0 = -98,00 - 0,4044a - 0,2929b - 0,1547c + 0,0006e + 0,4260f + 0,4526g - 0,1029i - 0,5874k$$

$$+ 181,08 + 0,4652a - 0,3044b + 0,3894c + 0,2690e + 0,2640f + 0,7150g - 0,7644i$$

$$- 279,08 - 0,8996a + 0,0115b - 0,5441c - 0,2357e + 0,1620f - 0,2624g + 0,6615i$$

$$6) 0 = -64,00 - 0,4142a - 0,4810b + 0,4065c + 0,0198e - 0,2647f + 0,5244g + 0,6822i - 0,7500k$$

$$+ 231,20 + 0,5940a - 0,3887b + 0,4972c + 0,3428e + 0,3371f + 0,9130g - 0,9760i$$

$$- 295,20 - 1,0082a - 0,77b - 0,0907e - 0,2240e - 0,6018f - 0,3886g + 1,6582i$$

$$+ 167,20 + 0,1798a - 0,0923b - 0,8697b + 0,9037c + 0,3636e + 0,0724f + 1,4374g - 0,2938i$$

$$7) 0 = -114,00 - 0,3472a + 0,4200b - 0,5472c + 0,4440e + 0,1674f + 0,2565g - 0,9878i - 0,0906k.$$

$$+ 27,33 + 0,2714a - 0,0820b + 0,0601c + 0,2415e$$



7.

$$0 = -114,00 - 0,3472a + 0,4200b - 0,5472c + 0,4440e + 0,1674f + 0,2565g - 0,9878i - 0,0906k.$$

$$\begin{array}{r} + 27,93 + 0,0718a - 0,0470b + 0,0601c + 0,0415e + 0,0407f + 0,1103g - 0,1179i \\ - 141,93 - 0,4190a + 0,4670b - 0,6073c + 0,4028e + 0,1267f + 0,1462g - 0,8699i \\ - 86,07 - 0,2754a + 0,3730b - 0,4871c + 0,4858e + 0,2081f + 0,3668g - 1,1057i \end{array}$$

8

$$0 = -97,00 - 0,4824a - 0,0982b + 0,3634c + 0,5027e - 0,2391f + 0,2781g + 0,4561i + 0,5490k.$$

$$\begin{array}{r} + 169,24 + 0,4348a - 0,2845b + 0,3639c + 0,2517e + 0,2467f + 0,6683g - 0,7144i \\ + 72,24 - 0,0476a - 0,3827b + 0,7273c + 0,7544e + 0,0076f + 0,9464g - 0,2583i \\ - 266,24 - 0,9172a + 0,1863b + 0,0005c + 0,2510e - 0,4858f - 0,3902g + 1,1705i \end{array}$$

10h 45m

1,819281	<sup>a</sup> 0,068186-1	<sup>b</sup> 0,526339-1	<sup>c</sup> 0,137987-1	<sup>e</sup> 0,710117-2	<sup>f</sup> 0,212188-1	<sup>g</sup> 0,797337-1
0,725585-1	0,725585-1	0,725585-1	0,725585-1	0,725585-1	0,725585-1	0,725585-1
2,093696	0,342601-1	0,800754-1	0,412402-1	0,984532-2	0,486603-1	0,071752
124,07	0,2201	0,6320	0,2585	0,0965	0,3066	1,1796

9.

$$0 = -41,41 - 0,0979a - 0,3908b + 0,3561c - 0,0861e - 0,0678f - 0,1182g - 0,7829i$$

$$\begin{array}{r} + 97,13 + 0,1723a - 0,4948b + 0,2024c + 0,0755e + 0,2400f + 0,9235g \\ - 158,54 - 0,2702a + 0,1040b + 0,1537c - 0,1616e - 0,3078f - 1,0417g \end{array}$$

4)

$$0 = +70,94 + 0,0402a - 0,5558b + 0,3388c - 0,1271e + 0,0813f + 0,6213g - 1,0706i$$

$$\begin{array}{r} + 132,83 + 0,2356a - 0,6766b + 0,2768c + 0,1033e + 0,3282f + 1,2629g \\ - 61,89 - 0,1954a + 0,1208b + 0,0620c - 0,2304e - 0,2469f - 0,6416g \end{array}$$

5)

$$0 = -279,08 - 0,8996a + 0,0115b - 0,5441c - 0,2357e + 0,1620f - 0,2624g + 0,6615i$$

$$\begin{array}{r} + 82,07 + 0,1456a - 0,4181b + 0,1710c + 0,0638e + 0,2028f + 0,7803g \\ - 197,01 - 0,7540a - 0,4066b - 0,3731c - 0,1719e + 0,3648f + 0,5179g \end{array}$$



6

$$\begin{aligned}
 0 &= -295,20 - 1,0082a - 0,0923b - 0,0907c - 0,3240e - 0,6018f - 0,3886g + 1,6582i \\
 &\quad + 205,73 + 0,3650a - 1,0480b + 0,4286c + 0,1600e + 0,5084f + 1,9560g \\
 &\quad - 89,47 - 0,6432a - 1,1403b + 0,3379c - 0,1640e - 0,0934f + 1,5674g
 \end{aligned}$$

$$\begin{aligned}
 7) \quad 0 &= -141,93 - 0,4190a + 0,4670b - 0,6073c + 0,4028e + 0,1267f + 0,1462g - 0,8699i \\
 &\quad + 107,93 + 0,1915a - 0,5498b + 0,2249c + 0,0839e + 0,2667f + 1,0261g \\
 &\quad - 249,86 - 0,6105a + 1,0168b - 0,8322c + 0,3189e - 0,1400f - 0,8799g
 \end{aligned}$$

$$\begin{aligned}
 8) \quad 0 &= +72,24 - 0,0476a - 0,3827b + 0,7273c + 0,7544e + 0,0076f + 0,9464g - 0,2583i \\
 &\quad + 32,05 + 0,0569a - 0,1632b + 0,0668c + 0,0249e + 0,0792f + 0,3047g \\
 &\quad + 40,19 - 0,1045a - 0,2195b + 0,6605c + 0,7295e - 0,0716f + 0,6417g
 \end{aligned}$$

11h.40.

	a	b	c	e	f
2,141575	0,431685-1	0,017033-1	0,186674-1	0,208441	0,488269-1
0,017743	0,017743	0,017743	0,017743	0,017743	0,017743
2,123832	0,413942-1	0,999290-2	0,168931-1	0,190698	0,470526-1
132,99	0,2594	0,0998	0,1475	1,5513	0,2955

11h.45

$$\begin{aligned}
 4) \quad 0 &= -61,89 - 0,1954a + 0,1208b + 0,0620c - 0,2304e - 0,2469f - 0,6416g \\
 &\quad - 85,33 - 0,1664a + 0,0640b + 0,0946c - 0,9953e - 0,1896f \\
 &\quad + 23,44 - 0,0290a + 0,0568b - 0,0326c + 0,7649e - 0,0573f
 \end{aligned}$$

$$\begin{aligned}
 5) \quad 0 &= -197,01 - 0,7540a - 0,4066b - 0,3731c - 0,1719e + 0,3648f + 0,5179g \\
 &\quad - 68,88 - 0,1343a + 0,0517b + 0,0764c - 0,8034e - 0,1530f \\
 &\quad - 265,89 - 0,8883a - 0,3549b - 0,2967c - 0,9753e + 0,2118f
 \end{aligned}$$



\* Surda Feb. 14 1872

2,418285  
 0,889021 -1  
 2,529264  
 338,27

0,842235-1  
 0,889021-1  
 0,953214-1  
 0,8979

0,180699-1  
 0,889021-1  
 0,291678-1  
 0,1957

0,082067-1  
 0,889021-1  
 0,193046-1  
 0,1560

0,644832-1  
 0,889021-1  
 0,755811-1  
 0,5699

0,544440-1  
 0,889021-1  
 0,655419-1  
 0,4523

+160  
 7  
 167  
 -4  
 -4  
 -9  
 -19  
 +300  
 6  
 11  
 12  
 40  
 21  
 -13  
 3

4) 0 = -155,78 - 0,5787a - 0,0737b - 0,1467c - 0,4433e - 0,2791f - 0,4285g  
 -148,33 - 0,3927a - 0,0858b - 0,0684c - 0,2499e - 0,1983f  
 -7,45 - 0,1250a + 0,0121b - 0,0783c - 0,1934e - 0,0808f  
 -7  
 +39  
 +70  
 +1  
 -2  
 +5  
 +2

+38  
 +1  
 +3  
 +2  
 -2  
 -7  
 2  
 +38  
 1  
 +38  
 -10

MAJAN  
 TUDOMÁSEK AKADEMIA  
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2,565801	<sup>a</sup> 0,999043-1	<sup>b</sup> 0,595055-1	<sup>c</sup> 0,900695-1	<sup>e</sup> 0,773713-1	<sup>f</sup> 0,671728-1	<sup>g</sup> 46.0
0,114010	0,114010	0,114010	0,114010	0,114010	0,114010	0,035950
2,451791	9,885033-1	0,481045-1	0,786685-1	0,659703-1	0,557718-1	0,114010
283,01	0,7674	0,3027	0,6119	0,4568	0,3612	0,921940-1
						0,8355

3)  $0 = -46,59 - 0,1113a - 0,3820b + 0,3449c - 0,0937e - 0,0754f - 0,1086g - 0,7611i$   
 $+ 215,40 + 0,5841a - 0,2304b + 0,4657c + 0,3477e + 0,2749f + 0,6359g$   
 $- 261,99 - 0,6954a - 0,1516b - 0,1208c - 0,4414e - 0,3503f - 0,7745g$

4)  $0 = -320,94 - 0,9666a + 0,1030b - 0,5038c - 0,7099e - 0,4899f - 0,9261g + 0,5836i$   
 $+ 165,16 + 0,4479a - 0,1767b + 0,3571c + 0,2666e + 0,2108f + 0,4876g$   
 $- 155,78 - 0,5187a - 0,0737b - 0,1467c - 0,4433e - 0,2791f - 0,4385g$

5)  $0 = +83,08 + 0,0308a - 0,5973b + 0,2047c + 0,0029e + 0,6900f + 1,1676g - 0,8673i$   
 $+ 245,45 + 0,6656a - 0,2625b + 0,5007c + 0,0962e + 0,3133f + 0,7246g$   
 $- 162,37 - 0,6348a - 0,3348b - 0,2960c - 0,0933e + 0,0767f + 0,4430g$

6)  $0 = +167,20 + 0,1798a - 0,8697b + 0,9007c + 0,0606e + 0,0724f + 1,4074g - 0,2938i$   
 $+ 83,15 + 0,2255a - 0,0889b + 0,1798c + 0,1342e + 0,1061f + 0,2455g$   
 $+ 84,05 - 0,0457a - 0,7808b + 0,7239c + 0,2294e - 0,0337f + 1,1919g$

7)  $0 = -86,07 - 0,2754a + 0,0730b - 0,4871c + 0,4858e + 0,2081f + 0,0668g - 1,1057i$   
 $+ 312,92 + 0,8485a - 0,3347b + 0,6766c + 0,5051e + 0,3994f + 0,9238g$   
 $- 398,99 - 1,1239a + 0,7077b - 1,1637c - 0,0193e - 0,1913f - 0,5570g$

8)  $0 = -266,24 - 0,9172a + 0,1863b - 0,0005c + 0,2510e - 0,4858f - 0,3902g + 1,1705i$   
 $+ 331,26 + 0,8982a - 0,3543b + 0,7162c + 0,5347e + 0,4228f + 0,9780g$   
 $+ 65,02 - 0,0190a - 0,1680b + 0,7157c + 0,7857e - 0,0630f + 0,5878g$

4000	-20
24	-20
24	
40	
388	

+283	-240
15	18
	17
298	24
	209

-321	+300
13	6
	24
7	36
341	360

-156	+160
4	4
	15
-160	18
	+1.97

56.0.



$$1) K = -308,27 + 0,7920 \underline{a} + 0,5183 \underline{b} - 0,6692 \underline{c} - 0,4584 \underline{e} - 0,4494 \underline{f} - 1,2173 \underline{g} + 1,3013 \underline{i}$$

$$2) 0 = -367,96 - 0,9978 \underline{a} + 0,3936 \underline{b} - 0,7956 \underline{c} - 0,5939 \underline{e} - 0,4696 \underline{f} - 1,0863 \underline{g} + 1,3002 \underline{i}$$

$$3) 0 = -46,59 - 0,1113 \underline{a} - 0,3820 \underline{b} + 0,3449 \underline{c} - 0,0937 \underline{e} - 0,0754 \underline{f} - 0,1386 \underline{g} - 0,7611 \underline{i}$$

$$4) 0 = -320,94 - 0,9666 \underline{a} + 0,1030 \underline{b} - 0,5038 \underline{c} - 0,7099 \underline{e} - 0,4899 \underline{f} - 0,9261 \underline{g} + 0,5836 \underline{i}$$

$$5) 0 = +83,08 + 0,0308 \underline{a} - 0,5973 \underline{b} + 0,2347 \underline{c} + 0,3029 \underline{e} + 0,6900 \underline{f} + 1,1676 \underline{g} - 0,8673 \underline{i}$$

$$6) 0 = +167,20 + 0,1798 \underline{a} - 0,8697 \underline{b} + 0,9037 \underline{c} + 0,3636 \underline{e} + 0,0724 \underline{f} + 1,4374 \underline{g} - 0,2938 \underline{i}$$

$$7) 0 = -86,07 - 0,2754 \underline{a} + 0,3730 \underline{b} - 0,4871 \underline{c} + 0,4858 \underline{e} + 0,2081 \underline{f} + 0,3668 \underline{g} - 1,1057 \underline{i}$$

$$8) 0 = -266,24 - 0,9172 \underline{a} + 0,1863 \underline{b} - 0,0005 \underline{c} + 0,2510 \underline{e} - 0,4858 \underline{f} - 0,3902 \underline{g} + 1,1705 \underline{i}$$

$$2) \underline{i} = +283,01 + 0,7674 \underline{a} - 0,3027 \underline{b} + 0,6119 \underline{c} + 0,4568 \underline{e} + 0,3612 \underline{f} + 0,8355 \underline{g}$$

$$3) 0 = -261,99 - 0,6954 \underline{a} - 0,1516 \underline{b} - 0,1208 \underline{c} - 0,4414 \underline{e} - 0,3503 \underline{f} - 0,7745 \underline{g}$$

$$4) 0 = -155,78 - 0,5187 \underline{a} - 0,0737 \underline{b} - 0,1467 \underline{c} - 0,4433 \underline{e} - 0,2791 \underline{f} - 0,4385 \underline{g}$$

$$5) 0 = -162,37 - 0,6348 \underline{a} - 0,3348 \underline{b} - 0,2960 \underline{c} - 0,0933 \underline{e} + 0,3767 \underline{f} + 0,4430 \underline{g}$$

$$6) 0 = +84,05 - 0,0457 \underline{a} - 0,7808 \underline{b} + 0,7239 \underline{c} + 0,2294 \underline{e} - 0,0337 \underline{f} + 1,1919 \underline{g}$$

$$7) 0 = -398,99 - 1,1239 \underline{a} + 0,7077 \underline{b} - 1,1637 \underline{c} - 0,0193 \underline{e} - 0,1913 \underline{f} - 0,5570 \underline{g}$$

$$8) 0 = +65,02 - 0,0190 \underline{a} - 0,1680 \underline{b} + 0,7157 \underline{c} + 0,7857 \underline{e} - 0,0630 \underline{f} + 0,5878 \underline{g}$$

$$3) \underline{g} = -338,27 - 0,8979 \underline{a} - 0,1957 \underline{b} - 0,1560 \underline{c} - 0,5699 \underline{e} - 0,4523 \underline{f}$$



		$\sin \lambda \times$	$\cos \lambda \times$	$\sin 2\lambda \times$	$\cos 2\lambda$
$X =$	$(31961 \cos \varphi + 2250 \sin 2\varphi) + (6023 \sin \varphi + 1264 \cos 2\varphi) - (2377 \sin \varphi + 5789 \cos 2\varphi) + 1208 \sin 2\varphi + 633 \sin 2\varphi$				
$\varphi = -60$	+14032	-5848 $\sin \lambda$	+4954 $\cos \lambda$	-1046 $\sin 2\lambda$	-548 $\cos 2\lambda$
-50	+18328	-4833 $\sin \lambda$	+2856 $\cos \lambda$	-1190 $\sin 2\lambda$	-623 $\cos 2\lambda$
-40	+22267	-3653 $\sin \lambda$	+0523 $\cos \lambda$	-1190 $\sin 2\lambda$	-623 $\cos 2\lambda$
-30	+25730	-2380 $\sin \lambda$	-1706 $\cos \lambda$	-1046 $\sin 2\lambda$	-548 $\cos 2\lambda$
-20	+28587	-1092 $\sin \lambda$	-3622 $\cos \lambda$	-0776 $\sin 2\lambda$	-407 $\cos 2\lambda$
-10	+30706	+0142 $\sin \lambda$	-5027 $\cos \lambda$	-0413 $\sin 2\lambda$	-206 $\cos 2\lambda$
0	+31961	+1264 $\sin \lambda$	-5789 $\cos \lambda$	0	0
+10	+32246	+2234 $\sin \lambda$	-5853 $\cos \lambda$	+0413 $\sin 2\lambda$	+0216 $\cos 2\lambda$
+20	+31479	+3028 $\sin \lambda$	-5248 $\cos \lambda$	+0776 $\sin 2\lambda$	+0407 $\cos 2\lambda$
+30	+29628	+3644 $\sin \lambda$	-4084 $\cos \lambda$	+1046 $\sin 2\lambda$	+0548 $\cos 2\lambda$
+40	+26699	+4091 $\sin \lambda$	-2533 $\cos \lambda$	+1190 $\sin 2\lambda$	+0623 $\cos 2\lambda$
+50	+22760	+4395 $\sin \lambda$	-0876 $\cos \lambda$	+1190 $\sin 2\lambda$	+623 $\cos 2\lambda$
+60	+17930	+4584 $\sin \lambda$	+0836 $\cos \lambda$	+1046 $\sin 2\lambda$	+548 $\cos 2\lambda$

$Y =$	$-(2377 - 5789 \sin \varphi) - (6023 - 1264 \sin \varphi) + 1265 \cos \varphi - 2415 \cos \varphi$				
$\varphi = -60$	-7390 $\sin \lambda$	-7118 $\cos \lambda$	+0633 $\sin 2\lambda$	-1208 $\cos 2\lambda$	
-50	-6812 $\sin \lambda$	-6991 $\cos \lambda$	+0813 $\sin 2\lambda$	-1552 $\cos 2\lambda$	
-40	-6098 $\sin \lambda$	-6835 $\cos \lambda$	+0969 $\sin 2\lambda$	-1850 $\cos 2\lambda$	
-30	-5272 $\sin \lambda$	-6655 $\cos \lambda$	+1096 $\sin 2\lambda$	-2091 $\cos 2\lambda$	
-20	-4357 $\sin \lambda$	-6455 $\cos \lambda$	+1189 $\sin 2\lambda$	-2269 $\cos 2\lambda$	
-10	-3382 $\sin \lambda$	-6242 $\cos \lambda$	+1246 $\sin 2\lambda$	-2378 $\cos 2\lambda$	
0	-2377 $\sin \lambda$	-6023 $\cos \lambda$	+1265 $\sin 2\lambda$	-2415 $\cos 2\lambda$	
+10	-1372 $\sin \lambda$	-5804 $\cos \lambda$	+1246 $\sin 2\lambda$	-2378 $\cos 2\lambda$	
+20	-0397 $\sin \lambda$	-5591 $\cos \lambda$	+1189 $\sin 2\lambda$	-2269 $\cos 2\lambda$	
+30	+0518 $\sin \lambda$	-5391 $\cos \lambda$	+1096 $\sin 2\lambda$	-2091 $\cos 2\lambda$	
+40	+1344 $\sin \lambda$	-5211 $\cos \lambda$	+0969 $\sin 2\lambda$	-1850 $\cos 2\lambda$	
+50	+2058 $\sin \lambda$	-5055 $\cos \lambda$	+0813 $\sin 2\lambda$	-1552 $\cos 2\lambda$	
+60	+2636 $\sin \lambda$	-4928 $\cos \lambda$	+0633 $\sin 2\lambda$	-1208 $\cos 2\lambda$	



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$Z$	$\sin^2 \varphi$ $63922 + 2250(2 - 3\cos^2 \varphi) - (12046 \cos \varphi - 1896 \sin^2 \varphi) + (4754 \cos^2 \varphi - 8684 \sin^2 \varphi) - 3623 \cos^2 \varphi - 1898 \cos^2 \varphi$	$\times \sin \lambda$	$\times \cos \lambda$	$\times \sin 2\lambda$	$\times \cos 2\lambda$
$\varphi = -60$	-52545	-7665 $\sin \lambda$	+9898 $\cos \lambda$	-906 $\sin 2\lambda$	-475 $\cos 2\lambda$
-50	-47255	-9610 $\sin \lambda$	+11608 $\cos \lambda$	-1497 $\sin 2\lambda$	-784 $\cos 2\lambda$
-40	-40549	-11095 $\sin \lambda$	+12194 $\cos \lambda$	-2126 $\sin 2\lambda$	-1114 $\cos 2\lambda$
-30	-32524	-12074 $\sin \lambda$	+11638 $\cos \lambda$	-2717 $\sin 2\lambda$	-1424 $\cos 2\lambda$
-20	-23322	-12539 $\sin \lambda$	+10049 $\cos \lambda$	-3199 $\sin 2\lambda$	-1676 $\cos 2\lambda$
-10	-13146	-12511 $\sin \lambda$	+7657 $\cos \lambda$	-3514 $\sin 2\lambda$	-1841 $\cos 2\lambda$
0	-02250	-12046 $\sin \lambda$	+4754 $\cos \lambda$	-3623 $\sin 2\lambda$	-1898 $\cos 2\lambda$
+10	+09054	-11215 $\sin \lambda$	+1712 $\cos \lambda$	-3514 $\sin 2\lambda$	-1841 $\cos 2\lambda$
+20	+20402	-10101 $\sin \lambda$	-1115 $\cos \lambda$	-3199 $\sin 2\lambda$	-1676 $\cos 2\lambda$
+30	+31398	-8790 $\sin \lambda$	-3404 $\cos \lambda$	-2717 $\sin 2\lambda$	-1424 $\cos 2\lambda$
+40	+41627	-7361 $\sin \lambda$	-4910 $\cos \lambda$	-2126 $\sin 2\lambda$	-1114 $\cos 2\lambda$
+50	+50677	-5876 $\sin \lambda$	-5496 $\cos \lambda$	-1497 $\sin 2\lambda$	-784 $\cos 2\lambda$
+60	+58171	-4387 $\sin \lambda$	-5144 $\cos \lambda$	-906 $\sin 2\lambda$	-475 $\cos 2\lambda$

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$\lambda$	$X$	$g = -60$				$X$	$g = -50$			
0	+14032	0	+4954	0	-548+18438	+18328	0	+2856	0	-623+20561
10		-1016	+4879	-358	-515+17022		-839	+2813	-407	-585+19310
20		-2000	+4655	-672	-420+15595		-1653	+2684	-765	-477+18117
30		-2924	+4290	-906	-274+14218		-2417	+2473	-1031	-312+17041
40		-3759	+3795	-1030	-95+12943		-3107	+2188	-1172	-108+16129
50		-4480	+3184	-1030	+95+11801		-3702	+1836	-1172	+108+15398
60		-5065	+2477	-906	+274+10812		-4186	+1428	-1031	+312+14851
70		-5495	+1694	-672	+420+9979		-4542	+977	-765	+477+14475
80		-5759	+860	-358	+515+9190		-4760	+496	-407	+585+14242
90		-5848	+0	0	+548+8732		-4833	0	-0	+623+14118
100		-5759	-860	+358	+515+8286		-4760	-496	+407	+585+14064
110		-5495	-1694	+672	+420+7935		-4542	-977	+765	+477+14051
120		-5065	-2477	+906	+274+7670		-4186	-1428	+1031	+312+14057
130		-4480	-3184	+1030	+95+7493		-3702	-1836	+1172	+108+14070
140		-3759	-3795	+1030	-95+7413		-3107	-2188	+1072	-108+14097
150		-2924	-4290	+906	-274+7450		-2417	-2473	+1031	-312+14157
160		-2000	-4655	+672	-420+7629		-1653	-2684	+765	-477+14279
170		-1016	-4879	+358	-515+7980		-839	+2813	+407	-585+14498
180		0	-4954	0	-548+8530		0	-2856	0	-623+14849
190		+1016	-4879	-358	-515+9296		+839	-2813	-407	-585+15362
200		+2000	-4655	-672	-420+10285		+1653	-2684	-765	-477+16055
210		+2924	-4290	-906	-274+11486	MAGYAR KÖZMŰVELISÉG AKADÉMIA KÖNYVTÁRA	+2417	-2473	-1031	-312+16929
220		+3759	-3795	-1030	-95+12871		+3107	-2188	-1172	-108+17966
230		+4480	-3184	-1030	+95+14393		+3702	-1836	-1172	+108+19130
240		+5065	-2477	-906	+274+15988		+4186	-1428	-1031	+312+20367
250		+5495	-1694	-672	+420+17581		+4542	-977	-765	+477+21605
260		+5759	-860	-358	+515+19088		+4760	-496	-407	+585+22770
270		+5848	0	0	+548+20428		+4833	0	-0	+623+23784
280		+5759	+860	+358	+515+21524		+4760	+496	+407	+585+24576
290		+5495	+1694	+672	+420+22313		+4542	+977	+765	+477+25089
300		+5065	+2477	+906	+274+22754		+4186	+1428	+1031	+312+25285
310		+4480	+3184	+1030	+95+22821		+3702	+1836	+1172	+108+25146
320		+3759	+3795	+1030	-95+22521		+3107	+2188	+1172	-108+24687
330		+2924	+4290	+906	-274+21878		+2417	+2473	+1031	-312+23937
340		+2000	+4655	+672	-420+20939		+1653	+2084	+765	-477+22953
350		+1016	+4879	+358	-515+19770		+839	+2813	+407	-585+21802



$\lambda$	$\chi$	$\varphi = -40$					$\chi$	$\varphi = -30$					$\chi$	
0	+22267	0	+523	0	-623	+22967	+25730	0	-1706	0	-548	+23476	0	+
10	-634	+515	-407	-585	21156	-413	-1680	-358	-515	22764	10			
20	-1249	+491	-765	-477	20267	-814	-1603	-672	-420	22221	20			
30	-1827	+453	-1031	-312	19550	-1190	-1477	-906	-274	21883	30			
40	-2348	+407	-1172	-108	19040	-1530	-1307	-1030	-95	21768	40			
50	-2798	+336	-1172	+108	18741	-1823	-1097	-1030	+95	21875	50			
60	-3164	+262	-1031	+312	18646	-2061	-853	-906	+274	22184	60			
70	-3433	+179	-765	+477	18725	-2236	-583	-672	+420	22659	70			
80	-3598	+91	-407	+585	18938	-2344	-296	-358	+515	23247	80			
90	-3653	0	0	+623	19237	-2380	0	0	+548	23898	90			
100	-3598	-91	+407	+585	19570	-2344	+296	+358	+515	24555	100			
110	-3433	-179	+765	+477	19897	-2236	+583	+672	+420	25169	110			
120	-3164	-262	+1031	+312	20184	-2061	+853	+906	+274	25702	120			
130	-2798	-336	+1172	+108	20413	-1823	+1097	+1030	+95	26129	130			
140	-2348	-407	+1172	-108	20582	-1530	+1307	+1030	-95	26442	140			
150	-1827	-453	+1031	-312	20706	-1190	+1477	+906	-274	26649	150			
160	-1249	-491	+765	-477	20815	-814	+1603	+672	-420	26771	160			
170	-634	-515	+407	-585	20940	-413	+1680	+358	-515	26840	170			
180	0	-523	0	-623	21121	0	+1706	0	-548	26888	180			
190	+634	-515	-407	-585	21394	+413	+1680	-358	-515	26950	190			
200	+1249	-491	-765	-477	21783	+814	+1603	-672	-420	27055	200			
210	+1827	-453	-1031	-312	22298	+1190	+1477	-906	-274	27187	210			
220	+2348	-407	-1172	-108	22934	+1530	+1307	-1030	-95	27442	220			
230	+2798	-336	-1172	+108	23665	+1823	+1097	-1030	+95	27715	230			
240	+3164	-262	-1031	+312	24450	+2061	+853	-906	+274	28012	240			
250	+3433	-179	-765	+477	25233	+2236	+583	-672	+420	28297	250			
260	+3598	-91	-407	+585	25952	+2344	+296	-358	+515	28527	260			
270	+3653	0	0	+623	26543	+2380	0	0	+548	28658	270			
280	+3598	+91	+407	+585	26948	+2344	-296	+358	+515	28651	280			
290	+3433	+179	+765	+477	27121	+2236	-583	+672	+420	28475	290			
300	+3164	+262	+1031	+312	27036	+2061	-853	+906	+274	28118	300			
310	+2798	+336	+1172	+108	26681	+1823	-1097	+1030	+95	27581	310			
320	+2348	+407	+1172	-108	26080	+1530	-1307	+1030	-95	26888	320			
330	+1827	+453	+1031	-312	25266	+1190	-1477	+906	-274	26075	330			
340	+1249	+491	+765	-477	24295	+814	-1603	+672	-420	25193	340			
350	+634	+515	+407	-585	23238	+413	-1680	+358	-515	24306	350			



	$\lambda$	$\varphi = -20$					$\lambda$	$\varphi = -10$					
76	0	+28587	0	-3622	0	-407	+24558	+30706	0	-5024	0	-216	+25463
764	10		-190	-3567	-265	-382	24183		+25	-4951	-141	-203	25436
21	20		-373	-3404	-499	-312	23999		+49	-4724	-266	-165	25600
83	30		-546	-3137	-672	-204	24028		+71	-4354	-358	-108	25957
68	40		-702	-2475	-764	-71	24275		+91	-3851	-407	-38	26501
75	50		-837	-2328	-764	+71	24729		+109	-3231	-407	+38	27215
84	60		-946	-1811	-672	+204	25362		+123	-2514	-358	+108	28065
59	70		-1026	-1239	-499	+312	26135		+133	-1719	-266	+165	29019
47	80		-1075	-629	-265	+382	27000		+140	-873	-141	+203	30035
88	90		-1092	0	0	+407	27902		+142	0	0	+216	31064
55	100		-1075	+629	+265	+382	28788		+140	+873	+141	+203	32063
69	110		-1026	+1239	+499	+312	29611		+133	+1719	+266	+165	32989
702	120		-946	+1811	+672	+204	30328		+123	+2514	+358	+108	33809
29	130		-837	+2328	+764	+71	30913		+109	+3231	+407	+38	34491
42	140		-702	+2475	+764	-71	31353		+91	+3851	+407	-38	35017
79	150		-546	+3137	+672	-204	31646		+71	+4354	+358	-108	35381
71	160		-373	+3404	+499	-312	31805		+49	+4724	+266	-165	35580
840	170		-190	+3567	+265	-382	31847		+25	+4951	+141	-203	35620
88	180		0	+3622	0	-407	31802		0	+5024	0	-216	35517
50	190		+190	+3567	-265	-382	31697		-25	+4951	-141	-203	35288
55	200		+373	+3404	-499	-312	31553		-49	+4724	-266	-165	34950
87	210		+546	+3137	-672	-204	31394		-71	+4354	-358	-108	34523
42	220		+702	+2475	-764	-71	31229		-91	+3851	-407	-38	34021
15	230		+837	+2328	-764	+71	31059		-109	+3231	-407	+38	33459
12	240		+946	+1811	-672	+204	30876		-123	+2514	-358	+108	32847
297	250		+1026	+1239	-499	+312	30665		-133	+1719	-266	+165	32191
527	260		+1075	+629	-265	+382	30408		-140	+873	-141	+203	31501
658	270		+1092	0	0	+407	30086		-142	0	0	+216	30780
51	280		+1075	-629	+265	+382	29680		-140	-873	+141	+203	30037
75	290		+1026	-1239	+499	+312	29185		-133	-1719	+266	+165	29285
18	300		+946	-1811	+672	+204	28598		-123	-2514	+358	+108	28535
581	310		+837	-2328	+764	+71	27931		-109	-3231	+407	+38	27811
88	320		+702	-2475	+764	-71	27207		-91	-3851	+407	-38	27133
75	330		+546	-3137	+672	-204	26464		-71	-4354	+358	-108	26531
93	340		+373	-3404	+499	-312	25743		-49	-4724	+266	-165	26034
06	350		+190	-3567	+265	-382	25093		-25	-4951	+141	-203	25668



$\lambda$	$X$	$g=0$	
0	31961	0 -5789	+26172
10		+219 -5701	+26479
20		+432 -5440	+26953
30		+632 -5013	+27580
40		+812 -4435	+28338
50		+968 -3721	+29208
60		+1095 -2895	+30161
70		+1188 -1980	+31169
80		+1245 -1005	+32201
90		+1264 - 0	+33225
100		+1245 +1005	+34211
110		+1188 +1980	+35129
120		+1095 +2895	+35951
130		+968 +3721	+36650
140		+812 +4435	+37208
150		+632 +5013	+37606
160		+432 +5440	+37833
170		+219 +5701	+37881
180		0 +5789	+37750
190		-219 +5701	+37443
200		-432 +5440	+36969
210		-632 +5013	+36342
220		-812 +4435	+35584
230		-968 +3721	+34714
240		-1095 +2895	+33761
250		-1188 +1980	+32753
260		-1245 +1005	+31721
270		-1264 0	+30697
280		-1245 -1005	+29711
290		-1188 -1980	+28793
300		-1095 -2895	+27971
310		-968 -3721	+27272
320		-812 -4435	+26714
330		-632 -5013	+26316
340		-432 -5440	+26089
350		-219 -5701	+26041

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$\lambda$	$X$	$g = +10$				$X$	$g = +20$					
0	+32246	0	-5853	0	+216	+26609	+31479	0	-5248	0	+407	+26638
10		+388	-5764	+141	+203	27214		+526	-5168	+265	+382	27484
20		+764	-5500	+266	+165	27941		+1036	-4931	+499	+312	28395
30		+1117	-5069	+358	+108	28760		+1514	-4545	+672	+204	29324
40		+1436	-4484	+407	+38	29643		+1946	-4020	+764	+71	30240
50		+1711	-3762	+407	-38	30564		+2320	-3373	+764	-71	31119
60		+1935	-2927	+358	-108	31504		+2622	-2624	+672	-204	31945
70		+2099	-2002	+266	-165	32444		+2845	-1795	+499	-312	32716
80		+2200	-1016	+141	-203	33368		+2982	-911	+265	-382	33433
90		+2234	0	0	-216	34264		+3028	0	0	-407	34100
100		+2200	+1016	-141	-203	35118		+2982	+911	-265	-382	34725
110		+2099	+2002	-266	-165	35916		+2845	+1795	-499	-312	35308
120		+1935	+2927	-358	-108	36642		+2622	+2624	-672	-204	35849
130		+1711	+3762	-407	-38	37274		+2320	+3373	-764	-71	36337
140		+1436	+4484	-407	+38	37797		+1946	+4020	-764	+71	36752
150		+1117	+5069	-358	+108	38182		+1514	+4545	-672	+204	37070
160		+764	+5500	-266	+165	38409		+1036	+4931	-499	+312	37259
170		+388	+5764	-141	+203	38452		+526	+5168	-265	+382	37290
180		0	+5853	0	+216	38315		0	+5248	0	+407	37134
190		-388	+5764	+141	+203	37944		-526	+5168	+265	+382	36768
200		-764	+5500	+266	+165	37413		-1036	+4931	+499	+312	36185
210		-1117	+5069	+358	+108	36664		-1514	+4545	+672	+204	35386
220		-1436	+4484	+407	+38	35739		-1946	+4020	+764	+71	34388
230		-1711	+3762	+407	-38	34666		-2320	+3373	+764	-71	33225
240		-1935	+2927	+358	-108	33488		-2622	+2624	+672	-204	31949
250		-2099	+2002	+266	-165	32250		-2845	+1795	+499	-312	30616
260		-2200	+1016	+141	-203	31000		-2982	+911	+265	-382	29291
270		-2234	0	0	-216	29796		-3028	0	0	-407	28044
280		-2200	-1016	-141	-203	28686		-2982	-911	-265	-382	26939
290		-2099	-2002	-266	-165	27714		-2845	-1795	-499	-312	26028
300		-1935	-2927	-358	-108	26918		-2622	-2624	-672	-204	25357
310		-1711	-3762	-407	-38	26328		-2320	-3373	-764	-71	24951
320		-1436	-4484	-407	+38	25957		-1946	-4020	-764	+71	24820
330		-1117	-5069	-358	+108	25810		-1514	-4545	-672	+204	24952
340		-764	-5500	-266	+165	25881		-1036	-4931	-499	+312	25325
350		-388	-5764	-141	+203	26156		-526	-5168	-265	+382	25902



$\lambda$	$\chi$	$\varphi = +30$				$\chi$	$\varphi = +40$				$\lambda$		
0	+29628	0	-4084	0	+548	+26092	+26699	0	-2533	0	+623	+24789	0
10		+633	-4022	+358	+515	27112		+710	-2495	+407	+585	25906	10
20		+1246	-3838	+672	+420	28128		+1399	-2380	+765	+477	26960	20
30		+1822	-3537	+906	+274	29093		+2046	-2194	+1031	+312	27894	30
40		+2342	-3129	+1030	+95	29966		+2630	-1940	+1172	+108	28669	40
50		+2791	-2625	+1030	-95	30729		+3134	-1628	+1172	-108	29269	50
60		+3156	-2042	+906	-244	31374		+3543	-1267	+1031	-312	29694	60
70		+3424	-1397	+672	-420	31907		+3844	-866	+765	-477	29965	70
80		+3589	-709	+358	-515	32351		+4029	-440	+407	-585	30110	80
90		+3644	0	0	-548	32724		+4091	0	0	-623	30167	90
100		+3589	+709	-358	-515	33053		+4029	+440	-407	-585	30176	100
110		+3424	+1397	-672	-420	33357		+3844	+866	-765	-477	30167	110
120		+3156	+2042	-906	-274	33646		+3543	+1267	-1031	-312	30166	120
130		+2791	+2625	-1030	-95	33919		+3134	+1628	-1172	-108	30181	130
140		+2342	+3129	-1030	+95	34164		+2630	+1940	-1172	+108	30205	140
150		+1822	+3537	-906	+274	34355		+2046	+2194	-1031	+312	30220	150
160		+1246	+3838	-672	+420	34460		+1399	+2380	-765	+477	30190	160
170		+633	+4022	-358	+515	34440		+710	+2495	-407	+585	30082	170
180		0	+4084	0	+548	34260		0	+2533	0	+623	29855	180
190		-633	+4022	+358	+515	33890		-71	+2495	+407	+585	30115	190
200		-1246	+3838	+672	+420	33312		-1399	+2380	+765	+477	28922	200
210		-1822	+3537	+906	+274	32523		-2046	+2194	+1031	+312	28190	210
220		-2342	+3129	+1030	+95	31540		-2630	+1940	+1172	+108	27289	220
230		-2791	+2625	+1030	-95	30397		-3134	+1628	+1172	-108	26257	230
240		-3156	+2042	+906	-274	29146		-3543	+1267	+1031	-312	25142	240
250		-3424	+1397	+672	-420	27853		-3844	+866	+765	-477	24009	250
260		-3589	+709	+358	-515	26591		-4029	+440	+407	-585	22932	260
270		-3644	0	0	-548	25436		-4091	0	0	-623	21985	270
280		-3589	-709	-358	-515	24457		-4029	-440	-407	-585	21238	280
290		-3424	-1397	-672	-420	23715		-3844	-866	-765	-477	20747	290
300		-3156	-2042	-906	-274	23250		-3543	-1267	-1031	-312	20546	300
310		-2791	-2625	-1030	-95	23087		-3134	-1628	-1172	-108	20657	310
320		-2342	-3129	-1030	+95	23222		-2630	-1940	-1172	+108	21065	320
330		-1822	-3537	-906	+274	23637		-2046	-2194	-1031	+312	21740	330
340		-1246	-3838	-672	+420	24292		-1399	-2380	-765	+477	22632	340
350		-633	-4022	-358	+515	25130		-710	-2495	-407	+585	23672	350



	$\lambda$	$X$	$\varphi = +50$				$X$	$\varphi = +60$					
489	0	+22760	0	-816	0	+623	+22967	+17930	0	+836	0	+548	+19314
906	10		+763	-804	+407	+585	23711		+796	+823	+358	+515	20422
960	20		+1503	-767	+765	+477	24738		+1568	+786	+672	+420	21376
994	30		+2198	-707	+1031	+312	25594		+2292	+724	+906	+274	22126
669	40		+2825	-625	+1172	+108	26240		+2947	+640	+1030	+95	22642
269	50		+3367	-525	+1172	-108	26666		+3512	+537	+1030	-95	22914
694	60		+3806	-408	+1031	-312	26877		+3970	+418	+906	-274	22950
965	70		+4130	-249	+765	-477	26899		+4308	+286	+672	-420	22776
110	80		+4328	-142	+407	-585	26768		+4514	+145	+358	-515	22432
167	90		+4395	0	0	-623	26532		+4584	0	0	-548	21966
176	100		+4328	+142	-407	-585	26238		+4514	-145	-358	-515	21426
167	110		+4130	+249	-765	-477	25927		+4308	-286	-672	-420	20860
166	120		+3806	+408	-1031	-312	25631		+3970	-418	-906	-274	20302
181	130		+3367	+525	-1172	-108	25372		+3512	-537	-1030	-95	19780
205	140		+2825	+625	-1172	+108	25146		+2947	-640	-1030	+95	19302
220	150		+2198	+707	-1031	+312	24946		+2292	-724	-906	+274	18866
290	160		+1503	+767	-765	+477	24742		+1568	-786	-672	+420	18460
082	170		+763	+804	-407	+585	24505		+796	-823	-358	+515	18060
855	180		0	+816	0	+623	24199		0	-836	0	+548	17642
115	190		-763	+804	+407	+585	23793		-796	-823	+358	+515	17184
922	200		-1503	+767	+765	+477	23266		-1568	-786	+672	+420	16668
190	210		-2198	+707	+1031	+312	22612		-2292	-724	+906	+274	16094
289	220		-2825	+625	+1172	+108	21840		-2947	-640	+1030	+95	15468
257	230		-3367	+525	+1172	-108	20982		-3512	-537	+1030	-95	14816
142	240		-3806	+408	+1031	-312	20081		-3970	-418	+906	-274	14174
009	250		-4130	+249	+765	-477	19197		-4308	-286	+672	-420	13588
932	260		-4328	+142	+407	-585	18396		-4514	-145	+358	-515	13114
985	270		-4395	0	0	-623	17742		-4584	0	0	-548	12798
238	280		-4328	-142	-407	-585	17298		-4514	+145	-358	-515	12688
747	290		-4130	-249	-765	-477	17109		-4308	+286	-672	-420	12816
546	300		-3806	-408	-1031	-312	17203		-3970	+418	-906	-95	13198
657	310		-3367	-525	-1172	-108	17588		-3512	+537	-1030	+95	13830
065	320		-2825	-625	-1172	+108	18246		-2947	+640	-1030	+274	14688
440	330		-2198	-707	-1031	+312	19136		-2292	+724	-906	+420	15730
632	340		-1503	-767	-765	+477	20202		-1568	+786	-672	+515	16896
672	350		-763	-804	-407	+585	21371		-796	+823	-358	+5	18114



$x$	$y$	$\varphi = -60$				$y$	$\varphi = -50$			
0	—	-7118	—	-1208	-8326	—	-6991	—	-1552	-8543
10	-1283	-7010	+216	-1135	-9212	-1183	-6885	+278	-1458	-9248
20	-2528	-6689	+407	-925	-9735	-2330	-6569	+528	-1189	-9560
30	-3695	-6164	+548	-604	-9915	-3406	-6054	+704	-776	-9532
40	-4750	-5453	+623	-210	-9790	-4379	-5355	+801	-270	-9203
50	-5661	-4575	+623	+210	-9403	-5218	-4494	+801	+270	-8641
60	-6400	-3559	+548	+604	-8807	-5899	-3496	+704	+776	-7915
70	-6944	-2434	+407	+925	-8046	-6401	-2391	+528	+1189	-7075
80	-7278	-1236	+216	+1135	-7163	-6709	-1214	+278	+1458	-6187
90	-7390	—	—	+1208	-6182	-6812	—	—	+1552	-5260
100	-7278	+1036	+216	+1135	-5123	-6709	+1214	-278	+1458	-4315
110	-6944	+2434	+407	+925	-3992	-6401	+2391	-528	+1189	-3349
120	-6400	+3559	+548	+604	-2785	-5899	+3496	-704	+776	-2337
130	-5661	+4575	+623	+210	-1499	-5218	+4494	-801	+270	-1255
140	-4750	+5453	+623	-210	-130	-4379	+5355	-801	-270	-95
150	-3695	+6164	+548	-604	+1317	-3406	+6054	-704	-776	+1168
160	-2528	+6689	+407	-925	+2829	-2330	+6569	-528	-1189	+2522
170	-1283	+7010	-216	-1135	+4376	-1183	+6885	-278	-1458	+3966
180	—	+7118	—	-1208	+5910	—	+6991	—	-1552	+5439
190	+1283	+7010	+216	-1135	+7374	+1183	+6885	+278	-1458	+6888
200	+2528	+6689	+407	-925	+8749	+2330	+6569	+528	-1189	+8238
210	+3695	+6164	+548	-604	+9803	+3406	+6054	+704	-776	+9388
220	+4750	+5453	+623	-210	+10616	+4379	+5355	+801	-270	+10265
230	+5661	+4575	+623	+210	+11069	+5218	+4494	+801	+270	+10783
240	+6400	+3559	+548	+604	+11111	+5899	+3496	+704	+776	+10875
250	+6944	+2434	+407	+925	+10710	+6401	+2391	+528	+1189	+10509
260	+7278	+1236	+216	+1135	+9865	+6709	+1214	+728	+1458	+10109
270	+7390	—	—	+1208	+8598	+6812	MAGYAR TUDOMÁNYOS AKADÉMIA KÖNYVTÁRA			+1552 + 8364
280	+7278	-1236	-216	+1135	+6961	+6709	-1214	-278	+1458	+6675
290	+6944	-2434	+407	+925	+5028	+6401	-2391	-528	+1189	+4671
300	+6400	-3559	+548	+604	+2897	+5899	-3496	-704	+776	+2475
310	+5661	-4575	+623	+210	+673	+5218	-4494	-801	+270	+193
320	+4750	-5453	+623	-210	-1536	+4379	-5355	-801	-270	-2047
330	+3695	-6164	+548	-604	-3621	+3406	-6054	-704	-776	-4128
340	+2528	-6689	+407	-925	-5493	+2330	-6569	-528	-1189	-5956
350	+1283	-7010	-216	-1135	-7078	+1183	-6885	-278	-1458	-7438



$\lambda$	$y$	$y$	$y = -40$	$y$	$y$	$y = -30$	$\lambda$
0	—	—	—	—	—	—	0
10	-1059	-6731	+331	-1738	-9197	-915	10
20	-2086	-6423	+623	-1417	-9303	-1803	20
30	-3049	-5919	+839	-925	-9054	-2636	30
40	-3920	-5236	+954	-321	-8523	-3389	40
50	-4671	-4393	+954	+321	-7789	-4039	50
60	-5281	-3418	+839	+925	-6935	-4566	60
70	-5730	-2338	+623	+1417	-6028	-4954	70
80	-6005	-1187	+331	+1738	-5123	-5192	80
90	-6098	—	—	+1850	-4248	-5272	90
100	-6005	+1187	-331	+1738	-3411	-5192	100
110	-5730	+2338	-623	+1417	-2598	-4954	110
120	-5281	+3418	-839	+925	-1777	-4566	120
130	-4671	+4393	-954	+321	-911	-4039	130
140	-3920	+5236	-954	-321	+41	-3389	140
150	-3049	+5919	-839	-925	+1106	-2636	150
160	-2086	+6423	-623	-1417	+2297	-1803	160
170	-1059	+6731	-331	-1738	+3603	-915	170
180	—	+6835	—	-1850	+4985	—	180
190	+1059	+6731	+331	-1738	+6383	+915	190
200	+2086	+6423	+623	-1417	+7715	+1803	200
210	+3049	+5919	+839	-925	+8882	+2636	210
220	+3920	+5236	+954	-321	+9789	+3389	220
230	+4671	+4393	+954	+321	+10339	+4039	230
240	+5281	+3418	+839	+925	+10463	+4566	240
250	+5730	+2338	+623	+1417	+10108	+4954	250
260	+6005	+1187	+331	+1738	+9261	+5192	260
270	+6098	—	—	+1850	+7948	+5272	270
280	+6005	-1187	-331	+1738	+6225	+5192	280
290	+5730	-2338	-623	+1417	+4186	+4954	290
300	+5281	-3418	-839	+925	+1949	+4566	300
310	+4671	-4393	-954	+321	-355	+4039	310
320	+3920	-5236	-954	-321	-2591	+3389	320
330	+3049	-5919	-839	-925	-4634	+2636	330
340	+2086	-6423	-623	-1417	-6377	+1803	340
350	+1059	-6731	-331	-1738	-7741	+915	350



	$\lambda$	$y$		$y = -20$		$y$		$y = -10$		
8746	0	—	-6455	—	-2269	-8724	—	-6242	—	-2378 -8620
9059	10	-757	-6357	+407	-2132	-8839	-587	-6147	+426	-2235 -8543
8955	20	-1490	-6066	+764	-1738	-8530	-1157	-5866	+801	-1822 -8044
8496	30	-2179	-5590	+1030	-1135	-7874	-1691	-5406	+1079	-1189 -7207
7771	40	-2801	-4945	+1171	-394	-6969	-2174	-4782	+1227	-413 -6142
6875	50	-3338	-4149	+1171	+394	-5922	-2591	-4012	+1227	+413 -4963
5899	60	-3773	-3228	+1030	+1135	-4836	-2929	-3121	+1079	+1189 -3782
4924	70	-4094	-2208	+764	+1738	-3800	-3178	-2135	+801	+1822 -2690
4008	80	-4291	-1121	+407	+2132	-2873	-3331	-1084	+426	+2235 -1754
3181	90	-4357	—	—	+2269	-2088	-3382	—	—	+2378 -1004
2446	100	-4291	+1121	-407	+2132	-1445	-3331	+1084	-426	+2235 -438
1780	110	-4094	+2208	-764	+1738	-912	-3178	+2135	-801	+1822 -22
1141	120	-3773	+3228	-1030	+1135	-440	-2929	+3121	-1079	+1189 +302
477	130	-3338	+4149	-1171	+394	+34	-2591	+4012	-1227	+413 +607
267	140	-2801	+4945	-1171	-394	+579	-2174	+4782	-1227	-413 +968
1132	150	-2179	+5590	-1030	-1135	+1246	-1691	+5406	-1079	-1189 +1447
2145	160	-1490	+6066	-764	-1738	+2074	-1157	+5866	-801	-1822 +2086
3299	170	-757	+6357	-407	-2132	+3061	-587	+6147	-426	-2235 +2899
4584	180	—	+6455	—	-2269	+4186	—	+6242	—	-2378 +3864
5879	190	+757	+6357	+407	-2132	+5389	+587	+6147	+426	-2235 +4925
7159	200	+1490	+6066	+764	-1738	+6582	+1157	+5866	+801	-1822 +6002
8302	210	+2179	+5590	+1030	-1135	+7664	+1691	+5406	+1079	-1189 +6987
9203	220	+2801	+4945	+1171	-394	+8523	+2174	+4782	+1227	-413 +7770
9759	230	+3338	+4149	+1171	+394	+9052	+2591	+4012	+1227	+413 +8243
9889	240	+3773	+3228	+1030	+1135	+9166	+2929	+3121	+1079	+1189 +8318
9536	250	+4094	+2208	+764	+1738	+8804	+3178	+2135	+801	+1822 +7936
8688	260	+4291	+1121	+407	+2132	+7951	+3331	+1084	+426	+2235 +7076
7363	270	+4357	—	—	+2269	+6626	+3382	MAGYAR TUDOMÁNYOS AKADÉMIA KÖNYVTÁRA		+2378 +5760
5626	280	+4291	-1121	-407	+2132	+4895	+3331	-1084	-426	+2235 +4056
3576	290	+4094	-2208	-764	+1738	+2860	+3178	-2135	-801	+1822 +2064
1335	300	+3773	-3228	-1030	+1135	+650	+2929	-3121	-1079	+1189 -82
955	310	+3338	-4149	-1171	+394	-1588	+2591	-4012	-1227	+413 -2235
3157	320	+2801	-4945	-1171	-394	-3709	+2174	-4782	-1227	-413 -4248
5722	330	+2179	-5590	-1030	-1135	-5576	+1691	-5406	-1079	-1189 -5983
6757	340	+1490	-6066	-764	-1738	-7078	+1157	-5866	-801	-1822 -7332
7979	350	+757	+6357	-407	-2132	-8139	+587	-6147	-426	-2235 -8221



$\lambda$	$y$	$y = 0$		$z$					
0	—	-6023	—	-2415	-8438				
10	- 413	-5932	+ 433	-2269	-8181				
20	- 813	-5660	+ 813	-1850	-7510				
30	-1189	-5216	+1096	-1208	-6517				
40	-1528	-4614	+1246	- 419	-5315				
50	-1821	-3872	+1246	+ 419	-4028				
60	-2059	-3012	+1096	+1208	-2767				
70	-2234	-2060	+ 813	+1850	-1631				
80	-2341	-1046	+ 433	+2269	- 685				
90	-2377	—	—	+2415	+ 38				
100	-2341	+1046	- 433	+2269	+ 541				
110	-2234	+2060	- 813	+1850	+ 863				
120	-2059	+3012	-1096	+1208	+1065				
130	-1821	+3872	-1246	+ 419	+1224				
140	-1528	+4614	-1246	- 419	+1421				
150	-1189	+5216	-1096	-1208	+1723				
160	- 813	+5660	- 813	-1850	+2184				
170	- 413	+5932	- 433	-2269	+2817				
180	—	+6023	—	-2415	+3608				
190	+ 413	+5932	+ 433	-2269	+4509				
200	+ 813	+5660	+ 813	-1850	+5436				
210	+1189	+5216	+1096	-1208	+6293				
220	+1528	+4614	+1246	- 419	+6969				
230	+1821	+3872	+1246	+ 419	+7358				
240	+2059	+3012	+1096	+1208	+7375				
250	+2234	+2060	+ 813	+1850	+6957				
260	+2341	+1046	+ 433	+2269	+6089				
270	+2377	—	—	+2415	+4792				
280	+2341	-1046	- 433	+2269	+3131				
290	+2234	-2060	- 813	+1850	+1211				
300	+2059	-3012	-1096	+1208	- 841				
310	+1821	-3872	-1246	+ 419	-2878				
320	+1528	-4614	-1246	- 419	-4757				
330	+1189	-5216	-1096	-1208	-6331				
340	+ 813	-5660	- 813	-1850	-7510				
350	+ 413	-5932	- 433	-2269	-8221				



$\lambda$	$y$	$y = +10$				$y$	$y = +20$			
0	—	-5804	—	-2378	-8182	—	-5591	—	-2269	-7860
10	-238	-5716	+426	-2235	-7763	-69	-5506	+407	-2132	-7300
20	-469	-5454	+801	-1822	-6944	-136	-5254	+764	-1738	-6364
30	-686	-5026	+1079	-1189	-5822	-199	-4842	+1030	-1135	-5146
40	-882	-4446	+1227	-413	-4514	-255	-4283	+1171	-394	-3761
50	-1057	-3731	+1227	+413	-3142	-304	-3594	+1171	+394	+2333
60	-1188	-2902	+1079	+1189	-1820	-344	-2796	+1030	+1135	-975
70	-1289	-1985	+801	+1822	-657	-373	-1912	+764	+1738	+217
80	-1357	-1008	+426	+2235	+302	-391	-0971	+407	+2132	+1177
90	-1372	—	—	+2378	+1006	-397	—	—	+2269	+1872
100	-1357	+1008	-426	+2235	+1466	-391	+0971	-407	+2132	+2305
110	-1289	+1985	-801	+1822	+1717	-373	+1912	-764	+1738	+2513
120	-1188	+2902	-1079	+1189	+1824	-344	+2796	-1030	+1135	+2557
130	-1057	+3731	-1227	+413	+1866	-304	+3594	-1171	+394	+2513
140	-882	+4446	-1227	-413	+1924	-255	+4283	-1171	-394	+2463
150	-686	+5026	-1079	-1189	+2072	-199	+4842	-1030	-1135	+2478
160	-469	+5454	-801	-1822	+2362	-136	+5254	-764	-1738	+2616
170	-238	+5716	-426	-2235	+2817	-69	+5506	-407	-2132	+2898
180	—	+5804	—	-2378	+3426	—	+5591	—	-2269	+3322
190	+238	+5716	+426	-2235	+4145	+69	+5506	+407	-2132	+3850
200	+469	+5454	+801	-1822	+4902	+136	+5254	+764	-1738	+4416
210	+686	+5026	+1079	-1189	+5602	+199	+4842	+1030	-1135	+4936
220	+882	+4446	+1227	-413	+6142	+255	+4283	+1171	-394	+5315
230	+1057	+3731	+1227	+413	+6422	+304	+3594	+1171	+394	+5463
240	+1188	+2902	+1079	+1189	+6358	+344	+2796	+1030	+1135	+5305
250	+1289	+1985	+801	+1822	+5897	+373	+1912	+764	+1738	+4787
260	+1357	+1008	+426	+2235	+5020	+391	+0971	+407	+2132	+3901
270	+1372	—	—	+2378	+3750	+397	MAGYAR TUDOMÁNYOS AKADEMIA KÖNYVTÁRA			+2269 +2666
280	+1357	-1008	-426	+2235	+2152	+391	-0971	-407	+2132	+1145
290	+1289	-1985	-801	+1822	+325	+373	-1912	-764	+1738	-565
300	+1188	-2902	-1079	+1189	-1604	+344	-2796	-1030	+1135	-2347
310	+1057	-3731	-1227	+413	-3494	+304	-3594	-1171	+394	-4067
320	+882	-4446	-1227	-413	-5204	+255	-4283	-1171	-394	-5593
330	+686	-5026	-1079	-1189	-6608	+199	-4842	-1030	-1135	-6808
340	+469	-5454	-801	-1822	-7608	+136	-5254	-764	-1738	-7620
350	+238	-5716	-426	-2235	-8139	+69	-5506	-407	-2132	-7976



$\lambda$	$y$	$y = +30$				$y$	$y = +40$				$\lambda$
0	—	-5391	—	-2091	-7482	—	-5211	—	-1850	-7061	0
10	+ 90	-5309	+ 375	-1965	-6809	+ 233	-5132	+ 331	-1738	-6306	10
20	+ 177	-5066	+ 704	-1602	-5787	+ 460	-4897	+ 623	-1417	-5231	20
30	+ 259	-4669	+ 949	-1046	-4507	+ 672	-4513	+ 839	-925	-3927	30
40	+ 333	-4130	+1079	-363	-3081	+ 864	-3992	+ 954	-321	-2495	40
50	+ 397	-3465	+1079	+ 363	-1626	+1030	-3350	+ 954	+ 321	-1045	50
60	+ 449	-2696	+ 949	+1046	-252	+1164	-2606	+ 839	+ 925	+ 322	60
70	+ 487	-1844	+ 704	+1602	+ 949	+1263	-1782	+ 623	+1417	+1521	70
80	+ 570	-0936	+ 375	+1965	+1914	+1324	-0905	+ 331	+1738	+2488	80
90	+ 578	—	—	+2091	+2609	+1344	—	—	+1850	+3194	90
100	+ 570	+0936	- 375	+1965	+3036	+1324	+0905	- 331	+1738	+3636	100
110	+ 487	+1844	- 704	+1602	+3229	+1263	+1782	- 623	+1417	+3839	110
120	+ 449	+2696	- 949	+1046	+3242	+1164	+2606	- 839	+ 925	+3856	120
130	+ 397	+3465	-1079	+ 363	+3146	+1030	+3350	- 954	+ 321	+3747	130
140	+ 333	+4130	-1079	-363	+3021	+ 864	+3992	- 954	-321	+3581	140
150	+ 259	+4669	- 949	-1046	+2933	+ 672	+4513	- 839	-925	+3421	150
160	+ 177	+5066	- 704	-1602	+2937	+ 460	+4897	- 623	-1417	+3317	160
170	+ 90	+5309	- 375	-1965	+3059	+ 233	+5132	- 331	-1738	+3296	170
180	—	+5391	—	-2091	+3300	—	+5211	—	-1850	+3361	180
190	- 90	+5309	+ 375	-1965	+3629	- 233	+5132	+ 331	-1738	+3492	190
200	- 177	+5066	+ 704	-1602	+3991	- 460	+4897	+ 623	-1417	+3643	200
210	- 259	+4669	+ 949	-1046	+4313	- 672	+4513	+ 839	-925	+3755	210
220	- 333	+4130	+1079	-363	+4513	- 864	+3992	+ 954	-321	+3761	220
230	- 397	+3465	+1079	+ 363	+4510	-1030	+3350	+ 954	+ 321	+3595	230
240	- 449	+2696	+ 949	+1046	+4242	-1164	+2606	+ 839	+ 925	+3206	240
250	- 487	+1844	+ 704	+1602	+3663	-1263	+1782	+ 623	+1417	+2559	250
260	- 570	+0936	+ 375	+1965	+2466	-1324	+0905	+ 331	+1738	+1650	260
270	- 578	—	—	+2091	+1573	-1344	—	—	+1850	+506	270
280	- 570	-0936	- 375	+1965	+144	-1324	-0905	- 331	+1738	-802	280
290	- 487	-1844	- 704	+1602	-1433	-1263	-1782	- 623	+1417	-2251	290
300	- 449	-2696	- 949	+1046	-3048	-1164	-2606	- 839	+ 925	-3684	300
310	- 397	-3465	-1079	+ 363	-4578	-1030	-3350	- 954	+ 321	-5013	310
320	- 333	-4130	-1079	-363	-5905	- 864	-3992	- 954	-321	-6131	320
330	- 259	-4669	- 949	-1046	-6923	- 672	-4513	- 839	-925	-6949	330
340	- 177	-5066	- 704	-1602	-7549	- 460	-4897	- 623	-1417	-7397	340
350	- 90	-5309	- 375	-1965	-7739	- 233	-5132	- 331	-1738	-7434	350



	$\lambda$	$y$	$y = +50$		$y$	$y = +60$	
-7061	0	—	-5055	—	-1552 - 6607	—	-4928 — -1208 - 6136
-6306	10	+ 357	-4978	+ 278	-1458 - 5801	+ 458	-4853 + 216 -1135 -5314
-5231	20	+ 704	-4750	+ 523	-1189 - 4712	+ 902	-4631 + 407 - 925 -4247
-3927	30	+1029	-4378	+ 704	- 776 - 3421	+1318	-4268 + 548 - 604 -3006
-2495	40	+1323	-3872	+ 801	- 240 - 2018	+1694	-3775 + 623 - 210 -1668
-1045	50	+1577	-3249	+ 801	+ 240 - 601	+ 2019	-3168 + 623 + 210 - 316
+ 322	60	+1782	-2528	+ 704	+ 776 + 734	+ 2283	-2464 + 548 + 604 + 971
+1521	70	+1934	-1729	+ 523	+1189 +1917	+2477	-1685 + 407 + 925 +2124
+2488	80	+ 2027	- 878	+ 278	+1458 +2885	+2596	-0856 + 216 +1135 +3091
+3194	90	+2058	—	—	+1552 +3610	+2636	— — +1208 +3844
+3636	100	+ 2027	+ 878	- 278	+1458 +4085	+2596	+0856 - 216 +1135 +4371
+3839	110	+1934	+1729	- 523	+1189 +4329	+2477	+1685 - 407 + 925 +4680
+3856	120	+1782	+2528	- 704	+ 776 +4382	+ 2283	+2464 - 548 + 604 +4803
+3747	130	+1577	+3249	- 801	+ 240 +4295	+ 2019	+3168 - 623 + 210 +4774
+3581	140	+1323	+3872	- 801	- 240 +4124	+1694	+3775 - 623 - 210 +4636
+3421	150	+1029	+4378	- 704	- 776 +3927	+1318	+4268 - 548 - 604 +4434
+3317	160	+ 704	+4750	- 523	-1189 +3742	+ 902	+4631 - 407 - 925 +4201
+3296	170	+ 357	+4978	- 278	-1458 +3599	+ 458	+4853 - 216 -1135 +3960
+3361	180	—	+5055	—	-1552 +3503	—	+4928 — -1208 +3720
+3492	190	- 357	+4978	+ 278	-1458 +3441	- 458	+4853 + 216 -1135 +3476
+3643	200	- 704	+4750	+ 523	-1189 +3380	- 902	+4631 + 407 - 925 +3211
+3755	210	-1029	+4378	+ 704	- 776 +3277	-1318	+4268 + 548 - 604 +2894
+3761	220	-1323	+3872	+ 801	- 240 +3080	-1694	+3775 + 623 - 210 +2494
+3595	230	-1577	+3249	+ 801	+ 240 +2443	- 2019	+3168 + 623 + 210 +1982
+3206	240	-1782	+2528	+ 704	+ 776 +2226	-2283	+2464 + 548 + 604 +1333
+2559	250	-1934	+1729	+ 523	+1189 +1507	-2477	+1685 + 407 + 925 + 540
+1650	260	-2027	- 878	+ 278	+1458 + 587	-2596	+0856 + 216 +1135 - 389
+ 506	270	-2058	—	—	+1552 - 506	-2636	— — +1208 -1428
- 802	280	-2027	- 878	- 278	+1458 -1725	-2596	-0856 - 216 +1135 -2533
-2251	290	-1934	-1729	- 523	+1189 -2997	-2477	-1685 - 407 + 925 -3644
-3684	300	-1782	-2528	- 704	+ 776 -4238	-2283	-2464 - 548 + 604 -4691
-5013	310	-1577	-3249	- 801	+ 240 -5357	-2019	-3168 - 623 + 210 -5600
-6131	320	-1323	-3872	- 801	- 240 -6266	-1694	-3775 - 623 - 210 -6302
-6949	330	-1029	-4378	- 704	- 776 -6887	-1318	-4268 - 548 - 604 -6738
-7397	340	- 704	-4750	- 523	-1189 -7166	- 902	-4631 - 407 - 925 -6865
-7434	350	- 357	-4978	- 278	-1458 -7071	- 458	-4853 - 216 -1135 -6662

MAGYAR  
TUDOMÁNYOS AKADEMIA  
KÖNYVTÁRA



Z	g = -60				Z	g = -50			
0	-52545	0 + 9898	0 - 475	-43122	-47255	0 + 11608	0 - 784	-36431	
10		-1331 + 9748	-310 - 446	-44884		-1669 + 11432	-512 - 737	-38741	
20		-2622 + 9301	-582 - 364	-46812		-3287 + 10908	-962 - 601	-41197	
30		-3833 + 8572	-785 - 238	-48829		-4805 + 10053	-1296 - 392	-43695	
40		-4927 + 7582	-892 - 82	-50864		-6177 + 8892	-1474 - 136	-46150	
50		-5872 + 6362	-892 + 82	-52865		-7362 + 7462	-1474 + 136	-48493	
60		-6638 + 4949	-785 + 238	-54781		-8323 + 5804	-1296 + 392	-50678	
70		-7203 + 3385	-582 + 364	-56581		-9030 + 3970	-962 + 601	-52676	
80		-7549 + 1719	-310 + 446	-58239		-9464 + 2016	-512 + 737	-54478	
90		-7665	0	0 + 475	-59735	-9610	0 - 0	+ 784	-56081
100		-7549	-1719	+310 + 446	-61057	-9464	-2016	+512 + 737	-57486
110		-7203	-3385	+582 + 364	-62187	-9030	-3970	+962 + 601	-58692
120		-6638	-4949	+785 + 238	-63109	-8323	-5804	+1296 + 392	-59694
130		-5872	-6362	+892 + 82	-63805	-7362	-7462	+1474 + 136	-60469
140		-4927	-7582	+892 - 82	-64244	-6177	-8892	+1474 - 136	-60986
150		-3833	-8572	+785 - 238	-64403	-4805	-10053	+1296 - 392	-61209
160		-2622	-9301	+582 - 364	-64250	-3287	-10908	+962 - 601	-61089
170		-1331	-9748	+310 - 446	-63760	-1669	-11432	+512 - 737	-60601
180		0	-9898	0 - 475	-62918	0	-11608	0 - 784	-59647
190		+1331	-9748	-310 <del>-475</del>	-61718	+1669	-11432	-512 - 737	-58267
200		+2622	-9301	-582 <del>-446</del>	-60170	+3287	-10908	-962 - 601	-56439
210		+3833	-8572	-785 <del>-364</del>	-58307	+4805	-10053	-1296 - 392	-54191
220		+4927	-7582	-892 <del>-238</del>	-56174	+6177	-8892	-1474 - 136	-51580
230		+5872	-6362	-892 <del>-82</del>	-53845	+7362	-7462	-1474 + 136	-48693
240		+6638	-4949	-785 <del>+82</del>	-51403	+8323	-5804	-1296 + 392	-45640
250		+7203	-3385	-582 <del>+238</del>	-48945	+9030	-3970	-962 + 601	-42556
260		+7549	-1719	-310 <del>+364</del>	-46579	+9464	-2016	-512 + 737	-39582
270		+7665	0	0 <del>+446</del>	-44405	+9610	0	0 + 784	-36861
280		+7549	+1719	+310 <del>+475</del>	-42521	+9464	+2016	+512 + 737	-34506
290		+7203	+3385	+582 <del>+446</del>	-41011	+9030	+3970	+962 + 601	-32692
300		+6638	+4949	+785 <del>+364</del>	-39935	+8323	+5804	+1296 + 392	-31440
310		+5872	+6362	+892 <del>+238</del>	-39337	+7362	+7462	+1474 + 136	-30821
320		+4927	+7582	+892 <del>+82</del>	-39226	+6177	+8892	+1474 - 136	-30848
330		+3833	+8572	+785 <del>-82</del>	-39593	+4805	+10053	+1296 - 392	-31493
340		+2622	+9301	+582 <del>-238</del>	-40404	+3287	+10908	+962 - 601	-32699
350		+1331	+9748	+310 <del>-364</del>	-41602	+1669	+11432	+512 - 737	-34379



$\lambda$	$Z$	$\varphi = -40$				$Z$	$\varphi = -30$				$\lambda$		
0	-10579	0	+12194	0	-1114	-29469	-32524	0	+11638	0	-1424	-22310	0
10		-1927	+12009	-727	-1047	-32241		-2097	+11461	-929	-1338	-25427	20
20		-3794	+11459	-1367	-853	-35704		-4130	+10936	-1746	-1091	-28555	20
30		-5548	+10560	-1841	-557	-37935		-6037	+10079	-2353	-712	-31547	30
40		-7132	+9341	-2094	-193	-40627		-7761	+8915	-2676	-247	-34293	40
50		-8499	+7838	-2094	+193	-43111		-9249	+7481	-2676	+247	-36721	50
60		-9609	+6097	-1841	+557	-45345		-10456	+5819	-2053	+712	-38802	60
70		-10426	+4171	-1367	+853	-47318		-11346	+3980	-1746	+1091	-40545	70
80		-10926	+2117	-727	+1047	-49038		-11891	+2021	-929	+1338	-41985	80
90		-11095	0	0	+1114	-50530		-12074	0	0	+1424	-43174	90
100		-10926	-2117	+727	+1047	-51818		-11891	-2021	+929	+1338	-44169	100
110		-10426	-4171	+1367	+853	-52926		-11346	-3980	+1746	+1091	-45013	110
120		-9609	-6097	+1841	+557	-53857		-10456	-5819	+2053	+712	-45734	120
130		-8499	-7838	+2094	+193	-54599		-9249	-7481	+2676	+247	-46331	130
140		-7132	-9341	+2094	-193	-55121		-7761	-8915	+2676	-247	-46771	140
150		-5548	-10560	+1841	-557	-55373		-6037	-10079	+2353	-712	-46999	150
160		-3794	-11459	+1367	-853	-55288		-4130	-10936	+1746	-1091	-46935	160
170		-1927	-12009	+727	-1047	-54805		-2097	-11461	+929	-1338	-46491	170
180		0	-12194	0	-1114	-53857		0	-11638	0	-1424	-45586	180
190		+1927	-12009	-727	-1047	-52385		+2097	-11461	-929	-1338	-44155	190
200		+3794	-11459	-1367	-853	-50434		+4130	-10936	-1746	-1091	-42167	200
210		+5548	-10560	-1841	-557	-47959		+6037	-10079	-2353	-712	-39631	210
220		+7132	-9341	-2094	-193	-45045		+7761	-8915	-2676	-247	-36601	220
230		+8499	-7838	-2094	+193	-41789		+9249	-7481	-2676	+247	-33185	230
240		+9609	-6097	-1841	+557	-38321		+10456	-5819	-2053	+712	-29528	240
250		+10426	-4171	-1367	+853	-34808		+11346	-3980	-1746	+1091	-25813	250
260		+10926	-2117	-727	+1047	-31420		+11891	-2021	-929	+1338	-22245	260
270		+11095	0	0	+1114	-28340		+12074	0	0	+1424	-19026	270
280		+10926	+2117	+727	+1047	-25732		+11891	+2021	+929	+1338	-16345	280
290		+10426	+4171	+1367	+853	-23732		+11346	+3980	+1746	+1091	-14361	290
300		+9609	+6097	+1841	+557	-22445		+10456	+5819	+2053	+712	-13184	300
310		+8499	+7838	+2094	+193	-21925		+9249	+7481	+2676	+247	-12870	310
320		+7132	+9341	+2094	-193	-21675		+7761	+8915	+2676	-247	-13419	320
330		+5548	+10560	+1841	-557	-20157		+6037	+10079	+2353	-712	-14767	330
340		+3794	+11459	+1367	-853	-24782		+4130	+10936	+1746	-1091	-16803	340
350		+1927	+12009	+727	-1047	-26933		+2097	+11461	+929	-1338	-19375	350



	$\lambda$	$Z$	$\varphi = -20$				$Z$	$\varphi = -10$					
22310	0	-23322	0	+10049	0	-1676	-14949	-13146	0	+7652	0	-1841	-7335
5427	20		-2177	+9896	-1094	-1575	-18272		-2173	+7536	-1202	-1730	-10715
8555	20		-4289	+9443	-2056	-1284	-21508		-4279	+7191	-2259	-1410	-13903
1547	30		-6270	+8703	-2770	-838	-24417		-6256	+6627	-3043	-921	-16739
4293	40		-8060	+7698	-3150	-291	-27125		-8042	+5862	-3461	-320	-19107
6721	50		-9605	+6459	-3150	+291	-29327		-9584	+4919	-3461	+320	-20952
8802	60		-10859	+5025	-2770	+838	-31088		-10835	+3826	-3043	+921	-22277
10545	70		-11783	+3437	-2056	+1284	-32440		-11756	+2617	-2259	+1410	-23134
11985	80		-12349	+1745	-1094	+1575	-33445		-12321	+1329	-1202	+1730	-23610
13174	90		-12539	0	0	+1676	-34185		-12511	0	0	+1841	-23876
14164	100		-12349	-1745	+1094	+1575	-34747		-12321	-1329	+1202	+1730	-23864
15013	110		-11783	-3437	+2056	+1284	-35202		-11756	-2617	+2259	+1410	-23850
15734	120		-10859	-5025	+2770	+838	-35598		-10835	-3826	+3043	+921	-23843
16331	130		-9605	-6459	+3150	+291	-35945		-9584	-4919	+3461	+320	-23868
16771	140		-8060	-7698	+3150	-291	-36221		-8042	-5862	+3461	-320	-23909
16999	150		-6270	-8703	+2770	-838	-36363		-6256	-6627	+3043	-921	-23907
16935	160		-4289	-9443	+2056	-1284	-36282		-4279	-7191	+2259	-1410	-23767
16491	170		-2177	-9896	+1094	-1575	-35876		-2173	-7536	+1202	-1730	-23383
15586	180		0	-10049	0	-1676	-35047		0	-7652	0	-1841	-22639
14155	190		+2177	-9896	-1094	-1575	-33710		+2173	-7536	-1202	-1730	-21441
12167	200		+4289	-9443	-2056	-1284	-31876		+4279	-7191	-2259	-1410	-19727
9631	210		+6270	-8703	-2770	-838	-29363		+6256	-6627	-3043	-921	-17481
6601	220		+8060	-7698	-3150	-291	-25401		+8042	-5862	-3461	-320	-14747
3185	230		+9605	-6459	-3150	+291	-23035		+9584	-4919	-3461	+320	-11622
29528	240		+10859	-5025	-2770	+838	-19420		+10835	-3826	-3043	+921	-8259
5813	250		+11783	-3437	-2056	+1284	-15748		+11756	-2617	-2259	+1410	-4856
2245	260		+12349	-1745	-1094	+1575	-12207		+12321	-1329	-1202	+1730	-1626
19026	270		+12539	0	0	+1676	-94107		+12511	0	0	+1841	+1206
16345	280		+12349	+1745	+1094	+1575	-66559		+12321	+1329	+1202	+1730	+3436
14361	290		+11783	+3437	+2056	+1284	-4762		+11756	+2617	+2259	+1410	+4896
13184	300		+10859	+5025	+2770	+838	-3830		+10835	+3826	+3043	+921	+5479
12870	310		+9605	+6459	+3150	+291	-3817		+9584	+4919	+3461	+320	+5738
13419	320		+8060	+7698	+3150	-291	-4705		+8042	+5862	+3461	-320	+3899
14767	330		+6270	+8703	+2770	-838	-6392		+6256	+6627	+3043	-921	+1859
16803	340		+4289	+9443	+2056	-1284	-8818		+4279	+7191	+2259	-1410	-827
19375	350		+2177	+9896	+1094	-1575	-11730		+2173	+7536	+1202	-1730	-3965



$\lambda$	$Z$	$g=0$			
0	-2250	0	+4754	0	-1898 + 606
10		-2092	+4682	-1239	-1784 -2683
20		-4120	+4467	-2329	-1454 -5686
30		-6023	+4117	-3138	-949 -8233
40		-7743	+3642	-3568	-330 -10249
50		-9228	+3056	-3568	+330 -11660
60		-10432	+2377	-3138	+949 -12494
70		-11320	+1626	-2329	+1454 -12819
80		-11863	+826	-1239	+1784 -12742
90		-12046	0	0	+1898 -12398
100		-11863	-826	+1239	+1784 -11916
110		-11320	-1626	+2329	+1454 -11413
120		-10432	-2377	+3138	+949 -10972
130		-9228	-3056	+3568	+330 -10636
140		-7743	-3642	+3568	-330 -10397
150		-6023	-4117	+3138	-949 -10207
160		-4120	-4467	+2329	-1454 -9992
170		-2092	-4682	+1239	-1784 -9569
180		0	-4754	0	-1898 -8912
190		+2092	-4682	-1239	-1784 -7863
200		+4120	-4467	-2329	-1454 -6380
210		+6023	-4117	-3138	-949 -4431
220		+7743	-3642	-3568	-330 -2047
230		+9228	-3056	-3568	+330 + 684
240		+10432	-2377	-3138	+949 +3616
250		+11320	-1626	-2329	+1454 + 6569
260		+11863	-826	-1239	+1784 +9332
270		+12046	0	0	+1898 +11694
280		+11863	+826	+1239	+1784 +13162
290		+11320	+1626	+2329	+1454 +14479
300		+10432	+2377	+3138	+949 +14646
310		+9228	+3056	+3568	+330 +13932
320		+7743	+3642	+3568	-330 +12373
330		+6023	+4117	+3138	-949 +10079
340		+4120	+4467	+2329	-1454 +7212
350		+2092	+4682	+1239	-1784 +3989



$\lambda$	$Z$	$\varphi = +10$					$Z$	$\varphi = +20$				
0	+9054	0	+1712	0	-1841	+8925+20402	0	-1115	0	-1676	+17611	
10	-1947 →	+1686	-1202	-1730	+5861		-1754	-1098	-1094	-1575	+14881	
20	-3836 →	+1609	-2259	-1410	+3158		-3455	-1048	-2056	-1284	+12559	
30	-5608 →	+1483	-3043	-921	+965		-5057	-966	-2770	-838	+10777	
40	-7209 →	+1311	-3461	-320	-625		-6493	-854	-3150	-291	+9614	
50	-8591 →	+1100	-3461	+320	-1578		-7738	-717	-3150	+291	+9088	
60	-9713 →	+856	-3043	+921	-1925		-8748	-558	-2770	+838	+9164	
70	-10539 →	+586	-2259	+1410	-1748		-9492	-381	-2056	+1284	+9757	
80	-11045 →	+297	-1202	+1730	-1166		-9948	-194	-1094	+1575	+10741	
90	-11215 →	0	0	+1841	-320		-10107	0	0	+1676	+11977	
100		-11045	-297	+1202	+1730	+644	-9948	+194	+1094	+1575	+13317	
110		-10539	-586	+2259	+1410	+1598	-9492	+381	+2056	+1284	+14631	
120		-9713	-856	+3043	+921	+2449	-8748	+558	+2770	+838	+15820	
130		-8591	-1100	+3461	+320	+3144	-7738	+717	+3150	+291	+16822	
140		-7209	-1311	+3461	-320	+3675	-6493	+854	+3150	-291	+17622	
150		-5608	-1483	+3043	-921	+4085	-5057	+966	+2770	-838	+18249	
160		-3836	-1609	+2259	-1410	+4458	-3455	+1048	+2056	-1284	+18767	
170		-1947	-1686	+1202	-1730	+4893	-1754	+1098	+1094	-1575	+19265	
180		0	-1712	0	-1841	+5501	0	+1115	0	-1676	+19841	
190		+1947	-1686	-1202	-1730	+6383	+1754	+1098	-1094	-1575	+20585	
200		+3836	-1609	-2259	-1410	+7612	+3455	+1048	-2056	-1284	+21565	
210		+5608	-1483	-3043	-921	+9215	+5057	+966	-2770	-838	+22811	
220		+7209	-1311	-3461	-320	+11171	+6493	+854	-3150	-291	+24308	
230		+8591	-1100	-3461	+320	+13404	+7738	+717	-3150	+291	+25998	
240		+9713	-856	-3043	+921	+15789	+8748	+558	-2770	+838	+27776	
250		+10539	-586	-2259	+1410	+18158	+9492	+381	-2056	+1284	+29503	
260		+11045	-297	-1202	+1730	+20330	+9948	+194	-1094	+1575	+31025	
270		+11215	+297	0	+1841	+22110	+10107	0	0	+1676	+32179	
280		+11045	+586	+1202	+1730	+23328	+9948	-194	+1094	+1575	+32825	
290		+10539	+856	+2259	+1410	+23848	+9492	-381	+2056	+1284	+32853	
300		+9713	+1100	+3043	+921	+23587	+8748	-558	+2770	+838	+32200	
310		+8591	+1311	+3461	+320	+22526	+7738	-717	+3150	+291	+30864	
320		+7209	+1483	+3461	-320	+20715	+6493	-854	+3150	-291	+28900	
330		+5608	+1609	+3043	-921	+18267	+5057	-966	+2770	-838	+26419	
340		+3836	+1686	+2259	-1410	+15348	+3455	-1048	+2056	-1284	+23581	
350		+1947	+1712	+1202	-1730	+12159	+1754	-1098	+1094	-1575	+20577	

МАГАР  
 ТИДОНАТОС АКАДЕМА  
 КОМПИЛА



$\lambda$	$Z$	$\varphi = +30$					$Z$	$\varphi = +40$					$\lambda$	
0	+31398	0	-3404	0	-1424	+26570	+41627	-	0	-4910	0	-1114	+35603	0
10		-1526	-3352	-929	-1338	+24253		-1278	-4835	-727	-1047	+33740		10
20		-3006	-3199	-1746	-1091	+22356		-2518	-4614	-1367	-853	+32275		20
30		-4395	-2948	-2353	-712	+20990		-3681	-4252	-1841	-557	+31296		30
40		-5650	-2608	-2676	-247	+20217		-4732	-3761	-2094	-193	+30847		40
50		-6733	-2188	-2676	+247	+20048		-5639	-3156	-2094	+193	+30931		50
60		-7612	-1702	-2353	+712	+20443		-6375	-2455	-1841	+557	+31573		60
70		-8260	-1164	-1746	+1091	+21319		-6917	-1679	-1367	+853	+32517		70
80		-8656	-591	-929	+1338	+22560		-7249	-853	-727	+1047	+33845		80
90		-8790	0	0	+1424	+24032		-7361	0	0	+1114	+35380		90
100		-8656	+591	+929	+1338	+25600		-7249	+853	+727	+1047	+37005		100
110		-8260	+1164	+1746	+1091	+27139		-6917	+1679	+1367	+853	+38609		110
120		-7612	+1702	+2353	+712	+28553		-6375	+2455	+1841	+557	+40105		120
130		-6733	+2188	+2676	+247	+29776		-5639	+3156	+2094	+193	+41431		130
140		-5650	+2608	+2676	-247	+30785		-4732	+3761	+2094	-193	+42557		140
150		-4395	+2948	+2353	-712	+31592		-3681	+4252	+1841	-557	+43482		150
160		-3006	+3199	+1746	-1091	+32246		-2518	+4614	+1367	-853	+44237		160
170		-1526	+3352	+929	-1338	+32815		-1278	+4835	+727	-1047	+44864		170
180		0	+3404	0	-1424	+33378		0	+4910	0	-1114	+45423		180
190		+1526	+3352	-929	-1338	+34009		+1278	+4835	-727	-1047	+45966		190
200		+3006	+3199	-1746	-1091	+34766		+2518	+4614	-1367	-853	+46539		200
210		+4395	+2948	-2353	-712	+35676		+3681	+4252	-1841	-557	+47162		210
220		+5650	+2608	-2676	-247	+36733		+4732	+3761	-2094	-193	+47833		220
230		+6733	+2188	-2676	+247	+37890		+5639	+3156	-2094	+193	+48521		230
240		+7612	+1702	-2353	+712	+39071		+6375	+2455	-1841	+557	+49173		240
250		+8260	+1164	-1746	+1091	+4067		+6917	+1679	-1367	+853	+49709		250
260		+8656	+591	-929	+1338	+41054		+7249	+1679	-1367	+853	+49709		260
270		+8790	0	0	+1424	+41612		+7361	+853	-727	+1047	+50049		270
280		+8656	-591	+929	+1338	+41730		—	0	0	+1114	+50102		280
290		+8260	-1164	+1746	+1091	+41331		+7249	-853	+727	+1047	+49797		290
300		+7612	-1702	+2353	+712	+40373		+6917	-1679	+1367	+853	+49085		300
310		+6733	-2188	+2676	+247	+38866		+6375	-2455	+1841	+557	+47945		310
320		+5650	-2608	+2676	-247	+36869		+5639	-3156	+2094	+193	+46397		320
330		+4395	-2948	+2353	-712	+34486		+4732	-3761	+2094	-193	+44499		330
340		+3006	-3199	+1746	-1091	+31860		+3681	-4252	+1841	-557	+42340		340
350		+1526	-3352	+929	-1338	+29163		+2518	-4614	+1367	-853	+40045		350
								+1278	-4835	+727	-1047	+37780		350



	$\lambda$	$Z$	$\varphi = +50$			$Z$	$\varphi = +60$		
+35603	0	+50677	0	-5496	0	-784 +44397 +58171	0	-5144	0 -475 +52552
+33740	10		-1020	-5413	-512	-737 +42995	-761	-5066	-310 -446 +51588
+32275	20		-2010	-5165	-962	-601 +41939	-1498	-4834	-582 -364 +50893
+31296	30		-2938	-4760	-1296	-392 +41291	-2191	-4455	-785 -238 +50502
+30847	40		-3777	-4210	-1474	-136 +41080	-2816	-3941	-892 -82 +50440
+30931	50		-4501	-3533	-1474	+136 +41305	-3356	-3307	-892 +82 +50698
+31573	60		-5089	-2748	-1296	+392 +41936	-3794	-2572	-785 +238 +51258
+32517	70		-5522	-1880	-962	+601 +42914	-4117	-1759	-582 +364 +52077
+33845	80		-5788	-954	-512	+737 +44160	-4314	-893	-310 +446 +53100
+35380	90		-5876	0	0	+784 +45585	-4381	0	0 +475 +54265
+37005	100		-5788	+954	+512	+737 +47092	-4314	+893	+310 +446 +55506
+38609	110		-5522	+1880	+962	+601 +48598	-4117	+1759	+582 +364 +56759
+40105	120		-5089	+2748	+1296	+392 +50024	-3794	+2572	+785 +238 +57972
+41431	130		-4501	+3533	+1474	+136 +51319	-3356	+3307	+892 +82 +59096
+42537	140		-3777	+4210	+1474	-136 +52448	-2816	+3941	+892 -82 +60106
+43482	150		-2938	+4760	+1296	-392 +53403	-2191	+4455	+785 -238 +60982
+44237	160		-2010	+5165	+962	-601 +54193	-1498	+4834	+582 -364 +61725
+44864	170		-1020	+5413	+512	-737 +54845	-761	+5066	+310 -446 +62340
+45423	180		0	+5496	0	-784 +55389	0	+5144	0 -475 +62840
+45966	190		+1020	+5413	-512	-737 +55861	+761	+5066	-310 -446 +63242
+46539	200		+2010	+5165	-962	-601 +56289	+1498	+4834	-582 -364 +63557
+47162	210		+2938	+4760	-1296	-392 +56687	+2191	+4455	-785 -238 +63794
+47833	220		+3777	+4210	-1474	-136 +57054	+2816	+3941	-892 -82 +63954
+48521	230		+4501	+3533	-1474	+136 +57373	+3356	+3307	-892 +82 +64024
+49173	240		+5089	+2748	-1296	+392 +57610	+3794	+2572	-785 +238 +63990
+49709	250		+5522	+1880	-962	+601 +57718	+4117	+1759	-582 +364 +63829
+50049	260		+5788	+954	-512	+737 +57644	+4314	+893	-310 +446 +63514
+50102	270		+5876	0	0	+784 +57337	+4381	0	0 +475 +63027
+49797	280		+5788	-954	+512	+737 +56760	+4314	-893	+310 +446 +62488
+49085	290		+5522	-1880	+962	+601 +55882	+4117	-1759	+582 +364 +61475
+47945	300		+5089	-2748	+1296	+392 +54706	+3794	-2572	+785 +238 +60416
+46397	310		+4501	-3533	+1474	+136 +53255	+3356	-3307	+892 +82 +59194
+44489	320		+3777	-4210	+1474	-136 +51582	+2816	-3941	+892 -82 +57856
+42340	330		+2938	-4760	+1296	-392 +49759	+2191	-4455	+785 -238 +56454
+40045	340		+2010	-5165	+962	-601 +47883	+1498	-4834	+582 -364 +55053
+37750	350		+1020	-5413	+512	-737 +46059	+761	-5066	+310 -446 +53730



$\varphi$	$u$	$\cos \varphi$	$\cos^2 \varphi$	$2 - 3 \cos^2 \varphi$	$\cos 2\varphi$	$\sin 2\varphi$	$\sin \varphi$
0	90	+1,00000	1,00000	-1,00000	+1,00000	+0,00000	0,00000
5	85   95	0,99620	0,99241	-0,97723	+0,98481		
10	80   100	+0,98481	0,96985	-0,90955	+0,93969	+0,34202	0,17365
15	75   105	0,96593	0,93302	-0,79906	+0,86603		
20	70   110	+0,93969	0,88302	-0,64906	+0,76604	+0,64279	0,34202
25	65   115	0,90631	0,82140	-0,46420	+0,64279		
30	60   120	+0,86603	0,75000	-0,25000	+0,50000	+0,86603	0,50000
35	55   125	0,81915	0,67101	-0,01303	+0,34202		
40	50   130	+0,76604	0,58682	+0,23954	+0,17365	+0,98481	0,64279
45	45   135	0,70711	0,50000	+0,50000	0		
50	40   140	+0,64279	0,41318	+0,76046	-0,17365	+0,98481	0,76604
55	35   145	0,57358	0,32899	+1,01303	-0,34202		
60	30   150	+0,50000	0,25000	+1,25000	-0,50000	+0,86603	0,86603

$$\sum_{-45}^{+45} = 16,90254 \quad \sum_{-45}^{+45} = 15,21506 \quad \sum_{-35}^{+35} = -9,12426 \quad \sum_{-45}^{+45} = 11,43006$$

$$\sum_{-45}^{+45} k_0 = 540230$$

$$\sum_{-45}^{+45} k_1 = -66170$$

$$\sum_{-45}^{+45} k_2 = 14450$$

$$\sum_{-45}^{+45} L_1 = -113070$$

$$\sum_{-45}^{+45} L_2 = -43500$$

$$\sum_{-45}^{+45} L_3 = -39470$$

$$\sum_{-45}^{+45} L_4 = 18560$$

$$\sum_{-55}^{+55} m_0 = -8150$$

$$\sum_{-45}^{+45} m_1 = 83320$$

$$\sum_{-45}^{+45} m_2 = -207070$$

$$\sum_{-45}^{+45} m_3 = -32670$$

$$\sum_{-45}^{+45} m_4 = -56940$$

$$X) \text{ h} - a = +31961$$

$$-e = +1264$$

$$+g = -5789$$

$$Y) \text{ h} - b = -5920$$

$$-c = -2289$$

$$-i = +1098$$

$$+f = -2335$$

$$Z) \text{ h} - k = +893$$

$$-b = -6726$$

$$c = +2464$$

$$i = -1431$$

$$f = -2495$$

$$\text{Számok } p=0 \quad p+5 \quad e, \quad q = -5 \text{ h} - k = +2250$$

tejem:

$$a = -31961$$

$$b = +6023$$

$$c = +2377$$

$$e = -1264$$

$$f = -2415$$

$$g = -5789$$

$$i = -1265$$

$$k = -2250$$

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$\lambda$	$\chi_s$	$\chi_t$	$\chi_s^{p=60} - \chi_t$	$\chi_s$	$\chi_t$	$\chi_s^{p=50} - \chi_t$	$\chi_s$	$\chi_t$	$\chi_s^{p=40} - \chi_t$	$\lambda$	$\lambda$
0	+18966	+18438	+ 528	+18730	+20561	- 1831	+18429	+22167	- 3738	0	0
10	+17178	+17022	+ 156	+17052	+19310	- 2258	+17168	+21156	- 3988	10	10
20	+15515	+15595	- 80	+15713	+18117	- 2404	+16341	+20267	- 3926	20	20
30	+14275	+14218	+ 57	+14685	+17041	- 2356	+15881	+19550	- 3669	30	30
40	+13103	+12943	+ 160	+14037	+16129	- 2092	+15744	+19040	- 3296	40	40
50	+11965	+11801	+ 164	+13524	+15398	- 1874	+15882	+18741	- 2859	50	50
60	+10831	+10812	+ 19	+13219	+14851	- 1632	+16252	+18646	- 2394	60	60
70	+9693	+9979	- 286	+13107	+14475	- 1374	+16676	+18725	- 2049	70	70
80	+8453	+9290	- 837	+13043	+14242	- 1199	+17232	+18938	- 1706	80	80
90	+7735	+8732	- 997	+13014	+14118	- 1104	+17906	+19237	- 1331	90	90
100	+7664	+8286	- 622	+13189	+14064	- 875	+18709	+19570	- 0861	100	100
110	+7449	+7935	- 486	+13660	+14051	- 391	+19592	+19897	- 305	110	110
120	+7143	+7670	- 527	+14186	+14057	+ 129	+20322	+20184	+ 138	120	120
130	+7264	+7493	- 229	+14538	+14070	+ 468	+21297	+20413	+ 884	130	130
140	+7946	+7413	+ 533	+14941	+14097	+ 844	+21770	+20582	+ 1188	140	140
150	+8867	+7450	+ 1417	+15601	+14157	+ 1444	+22095	+20706	+ 1389	150	150
160	+10068	+7629	+ 2439	+16630	+14279	+ 2351	+22823	+20815	+ 2008	160	160
170	+11421	+7980	+ 3441	+17890	+14498	+ 3392	+23623	+20940	+ 2683	170	170
180	+12950	+8530	+ 4420	+19071	+14849	+ 4222	+24561	+21121	+ 3440	180	180
190	+14415	+9296	+ 5119	+20144	+15362	+ 4782	+25446	+21394	+ 4052	190	190
200	+15578	+10285	+ 5293	+21027	+16055	+ 4972	+25991	+21783	+ 4208	200	200
210	+16558	+11486	+ 5072	+21646	+16929	+ 4717	+26169	+22298	+ 3871	210	210
220	+17356	+12871	+ 4485	+22069	+17966	+ 4103	+26209	+22934	+ 3275	220	220
230	+18148	+14393	+ 3755	+22447	+19130	+ 3317	+26176	+23665	+ 2511	230	230
240	+19002	+15988	+ 3014	+22941	+20367	+ 2574	+26174	+24450	+ 1724	240	240
250	+19991	+17581	+ 2410	+23486	+21605	+ 1881	+26271	+25233	+ 1038	250	250
260	+20949	+19088	+ 1861	+24158	+22770	+ 1388	+26459	+25952	+ 507	260	260
270	+21945	+20428	+ 1517	+24857	+23784	+ 1073	+26688	+26543	+ 145	270	270
280	+23388	+21524	+ 1864	+25913	+24576	+ 1337	+27102	+26948	+ 154	280	280
290	+24963	+22313	+ 2650	+24284	+25089	+ 2195	+27050	+27121	- 071	290	290
300	+25822	+22754	+ 3068	+27071	+25285	+ 1786	+26697	+27036	- 339	300	300
310	+25874	+22821	+ 3053	+26711	+25146	+ 1565	+26125	+26687	- 566	310	310
320	+25419	+22521	+ 2898	+25859	+24687	+ 1172	+25024	+26080	- 1056	320	320
330	+24340	+21878	+ 2462	+24443	+23937	+ 506	+23510	+25266	- 1756	330	330
340	+22736	+20939	+ 1797	+22632	+22953	- 321	+21781	+24295	- 2514	340	340
350	+20897	+19770	+ 1127	+20612	+21802	- 1190	+20006	+23238	- 3232	350	350



$\lambda$	$\lambda$	$\lambda_s$	$\lambda_t$	$\lambda_s - \lambda_t$ <sup><math>\varphi = -30</math></sup>	$\lambda_s$	$\lambda_t$	$\lambda_s - \lambda_t$ <sup><math>\varphi = -20</math></sup>	$\lambda_s$	$\lambda_t$	$\lambda_s - \lambda_t$ <sup><math>\varphi = -10</math></sup>	$\lambda$
0	0	+19054	+23176	- 4422	+20900	+24558	- 3658	+24412	+25463	- 1051	0
10	10	+18277	+22764	- 4487	+20737	+24183	- 3446	+24593	+25436	- 843	10
20	20	+18026	+22221	- 4195	+20910	+23999	- 3089	+24941	+25600	- 659	20
30	30	+18126	+21883	- 3757	+21409	+24028	- 2619	+25548	+25957	- 409	30
40	40	+18495	+21768	- 3273	+22129	+24245	- 2116	+26365	+26501	- 136	40
50	50	+19071	+21875	- 2804	+23061	+24729	- 1668	+27492	+27215	+ 277	50
60	60	+19825	+22184	- 2259	+24251	+25362	- 1111	+28857	+28065	+ 792	60
70	70	+20757	+22659	- 1908	+25520	+26135	- 615	+30283	+29019	+1264	70
80	80	+21742	+23247	- 1505	+26970	+27000	- 30	+31978	+30035	+1943	80
90	90	+22852	+23898	- 1046	+28571	+27902	+ 669	+33558	+31064	+2494	90
100	100	+24182	+24555	- 373	+30265	+28788	+ 1477	+34998	+32063	+2935	100
110	110	+25555	+25169	+ 386	+31643	+29611	+ 2032	+36085	+32989	+3096	110
120	120	+26774	+25702	+ 1072	+32996	+30328	+ 2668	+36832	+33809	+3023	120
130	130	+27883	+26129	+ 1754	+33971	+30913	+ 2958	+37117	+34491	+2626	130
140	140	+28647	+26442	+ 2205	+34453	+31353	+ 3100	+37060	+35017	+2043	140
150	150	+28866	+26649	+ 2217	+34601	+31646	+ 2955	+36714	+35381	+1333	150
160	160	+29137	+26771	+ 2366	+34530	+31805	+ 2725	+36158	+35380	+ 578	160
170	170	+29480	+26840	+ 2640	+34421	+31847	+ 2574	+36212	+35620	+ 592	170
180	180	+29914	+26888	+ 3026	+34220	+31802	+ 2418	+36192	+35517	+ 675	180
190	190	+30786	+26950	+ 3236	+33907	+31697	+ 2210	+35963	+35288	+ 675	190
200	200	+30737	+27055	+ 3082	+33521	+31553	+ 1968	+35414	+34950	+ 464	200
210	210	+29916	+27187	+ 2729	+32992	+31394	+ 1598	+34798	+34523	+ 275	210
220	220	+29556	+27442	+ 2114	+32375	+31229	+ 1146	+34039	+34021	+ 18	220
230	230	+29175	+27715	+ 1460	+31887	+31059	+ 828	+33750	+33459	+ 291	230
240	240	+28890	+28012	+ 878	+31559	+30846	+ 683	+33657	+32847	+ 810	240
250	250	+28595	+28297	+ 298	+31251	+30665	+ 586	+33590	+32191	+1399	250
260	260	+28135	+28524	- 392	+30795	+30408	+ 387	+33399	+31501	+1898	260
270	270	+27553	+28658	- 1105	+29921	+30086	- 165	+32702	+30780	+1922	270
280	280	+27446	+28657	- 1205	+28924	+29680	- 753	+31593	+30037	+1556	280
290	290	+27080	+28475	- 1395	+28049	+29185	- 1136	+30192	+29285	+ 907	290
300	300	+26497	+28118	- 1621	+27395	+28598	- 1203	+29035	+28535	+ 500	300
310	310	+25825	+27581	- 1756	+26730	+27931	- 1201	+28352	+27811	+ 541	310
320	320	+24699	+26888	- 2189	+25663	+27207	- 1544	+27550	+27133	+ 417	320
330	330	+23361	+26075	- 2714	+24432	+26464	- 2032	+26297	+26531	- 234	330
340	340	+21832	+25193	- 3361	+23091	+25743	- 2652	+25187	+26034	- 853	340
350	350	+20324	+24306	- 3982	+21725	+25093	- 3368	+24406	+25668	-1262	350



$\lambda$	$X_s$	$X_t$	$X_s - X_t$	$\lambda$
0	+28143	+26172	+ 1971	0
10	+28689	+26479	+ 2210	10
20	+29307	+26953	+ 2354	20
30	+30057	+27580	+ 2471	30
40	+30975	+28338	+ 2637	40
50	+31922	+29208	+ 2714	50
60	+32950	+30161	+ 2789	60
70	+34088	+31169	+ 2919	70
80	+35320	+32201	+ 3119	80
90	+36590	+33225	+ 3365	90
100	+37568	+34211	+ 3357	100
110	+38544	+35129	+ 3415	110
120	+38573	+35951	+ 2622	120
130	+38779	+36650	+ 2129	130
140	+38790	+37208	+ 982	140
150	+37283	+37606	- 323	150
160	+36403	+37833	- 1430	160
170	+36278	+37881	- 2603	170
180	+36414	+37750	- 1336	180
190	+36053	+37443	- 1380	190
200	+35657	+36969	- 1312	200
210	+35091	+36342	- 1251	210
220	+34490	+35584	- 1094	220
230	+34780	+34714	+ 066	230
240	+35306	+33761	+ 1545	240
250	+35468	+32753	+ 2715	250
260	+35270	+31721	+ 3549	260
270	+34677	+30697	+ 3980	270
280	+33766	+29711	+ 4055	280
290	+32007	+28793	+ 3208	290
300	+30482	+28971	+ 1511	300
310	+29971	+27272	+ 2699	310
320	+29267	+26714	+ 3553	320
330	+28281	+26316	+ 1965	330
340	+27609	+26089	+ 1520	340
350	+27659	+26041	+ 1618	350

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$\lambda$	$\lambda_s$	$\lambda_t$	$\frac{q=+10}{\lambda_s-\lambda_t}$	$\lambda_s$	$\lambda_t$	$\frac{q=+20}{\lambda_s-\lambda_t}$	$\lambda_s$	$\lambda_t$	$\frac{q=+30}{\lambda_s-\lambda_t}$	$\lambda$	$\lambda$
0	+29857	+26609	+ 3248	+28462	+26638	+1824	+25943	+26092	- 149	0	0
10	+30952	+27214	+ 3738	+29821	+27484	+2337	+27328	+27112	+ 216	10	10
20	+32021	+27941	+ 4080	+31303	+28395	+2908	+28635	+28128	+ 507	20	20
30	+32901	+28760	+ 4141	+32538	+29324	+3214	+29808	+29093	+ 715	30	30
40	+34232	+29643	+ 4589	+33832	+30240	+3592	+31030	+29966	+1064	40	40
50	+34403	+30564	+ 3839	+35024	+31119	+3905	+32219	+30729	+1490	50	50
60	+35288	+31504	+ 3784	+36080	+31945	+4135	+33290	+31374	+1916	60	60
70	+36260	+32444	+ 3816	+37195	+32716	+4479	+34081	+31907	+2174	70	70
80	+37541	+33368	+ 4173	+38004	+33433	+4571	+34407	+32351	+2056	80	80
90	+38347	+34264	+ 4083	+37810	+34100	+3710	+34362	+32724	+1638	90	90
100	+38745	+35118	+ 3627	+37277	+34725	+2552	+34228	+33053	+1175	100	100
110	+38312	+35916	+ 2396	+36782	+35308	+1474	+33928	+33357	+ 571	110	110
120	+37887	+36642	+ 1245	+36100	+35849	+ 251	+33284	+33646	- 362	120	120
130	+37296	+37274	+ 22	+35236	+36337	-1101	+32394	+33919	-1525	130	130
140	+36481	+37797	-1316	+34300	+36752	-2452	+31533	+34164	-2631	140	140
150	+35713	+38182	-2469	+33352	+37070	-3718	+30799	+34355	-3556	150	150
160	+34971	+38409	-3438	+32482	+37259	-4777	+30002	+34460	-4458	160	160
170	+33906	+38452	-4546	+31734	+37290	-5556	+29050	+34440	-5390	170	170
180	+34174	+38315	-4141	+31167	+37134	-5967	+28075	+34260	-6185	180	180
190	+34108	+37974	-3866	+30888	+36768	-5880	+27412	+33890	-6478	190	190
200	+33999	+37413	-3414	+30857	+36185	-5334	+27304	+33312	-6008	200	200
210	+33820	+36664	-2844	+30963	+35386	-4423	+27594	+32523	-4929	210	210
220	+33913	+35739	-1826	+31449	+34388	-2939	+28041	+31540	-3499	220	220
230	+34407	+34666	- 259	+32167	+33225	-1058	+28529	+30397	-1868	230	230
240	+35521	+33488	+2033	+32962	+31949	+1013	+28704	+29146	- 442	240	240
250	+36538	+32250	+4288	+33390	+30616	+2774	+28462	+27853	+ 609	250	250
260	+36529	+31000	+5529	+33289	+29291	+3998	+28285	+26591	+1694	260	260
270	+35557	+29796	+5761	+32964	+28044	+4920	+28069	+25436	+2633	270	270
280	+34170	+28686	+5484	+32146	+26939	+5207	+27392	+24457	+2935	280	280
290	+32287	+27714	+4567	+30700	+26028	+4672	+26550	+23715	+2835	290	290
300	+30780	+26918	+3862	+29129	+25357	+3772	+24036	+23250	+ 786	300	300
310	+30320	+26328	+3992	+27558	+24957	+2607	+22475	+23087	- 612	310	310
320	+29485	+25957	+3528	+26317	+24820	+1497	+21561	+23222	-1661	320	320
330	+28447	+25870	+2637	+25703	+24952	+ 751	+21642	+23637	-1995	330	330
340	+28777	+25881	+2296	+26154	+25325	+ 829	+22848	+24292	-1444	340	340
350	+28853	+26156	+2697	+27224	+25902	+1322	+24365	+25130	- 765	350	350



$\lambda$	$\lambda$	$\chi_s$	$\chi_t$	$\frac{p=+40}{\chi_s - \chi_t}$	$\chi_s$	$\chi_t$	$\frac{p=+50}{\chi_s - \chi_t}$	$\chi_s$	$\chi_t$	$\frac{p=+60}{\chi_s - \chi_t}$	$\lambda$
0	0	+21992	+24789	-2797	+17808	+22567	-4759	+14031	+19314	-5283	0
10	10	+23286	+25906	-2620	+18918	+23711	-4793	+15043	+20422	-5379	10
20	20	+24405	+26960	-2555	+19775	+24738	-4963	+15961	+21376	-5415	20
30	30	+25477	+27894	-2417	+20605	+25594	-4989	+16498	+22126	-5628	30
40	40	+26418	+28669	-2251	+21291	+26240	-4951	+16740	+22642	-5902	40
50	50	+27079	+29269	-2190	+21577	+26666	-5089	+16646	+22914	-6268	50
60	60	+27628	+29694	-2066	+21590	+26877	-5287	+16367	+22950	-6583	60
70	70	+28070	+29965	-1895	+21518	+26899	-5381	+15840	+22776	-6936	70
80	80	+28244	+30110	-1866	+21485	+26768	-5283	+15379	+22432	-7053	80
90	90	+28369	+30167	-1798	+21601	+26532	-4931	+15799	+21966	-6767	90
100	100	+28537	+30176	-1639	+21652	+26238	-4584	+15306	+21426	-6120	100
110	110	+28500	+30167	-1667	+21829	+25927	-4098	+15515	+20860	-5345	110
120	120	+28324	+30166	-1842	+22142	+25631	-3489	+15866	+20302	-4436	120
130	130	+28162	+30181	-2019	+22585	+25372	-2787	+16289	+19780	-3491	130
140	140	+28108	+30205	-2097	+22928	+25146	-2218	+16802	+19302	-2500	140
150	150	+27886	+30220	-2334	+23378	+24946	-1568	+17268	+18866	-1598	150
160	160	+27234	+30190	-2956	+23516	+24742	-1126	+17686	+18460	-774	160
170	170	+26265	+30082	-3817	+23143	+24505	-1362	+17703	+18060	-337	170
180	180	+25078	+29855	-4777	+22455	+24199	-1744	+17314	+17642	-328	180
190	190	+24380	+30115	-5735	+21732	+23793	-2061	+16555	+17184	-629	190
200	200	+24118	+28922	-4804	+21007	+23266	-2265	+15662	+16668	-1006	200
210	210	+24060	+28190	-4130	+20155	+22612	-2457	+14143	+16094	-1951	210
220	220	+23897	+27289	-3392	+19019	+21840	-2821	+12471	+15468	-2997	220
230	230	+23509	+26257	-2748	+17540	+20982	-3442	+10693	+14876	-4123	230
240	240	+22879	+25142	-2263	+16180	+20871	-3901	+8909	+14174	-5265	240
250	250	+22340	+24009	-1669	+14777	+19197	-4420	+7248	+13588	-6340	250
260	260	+21339	+22932	-1593	+13359	+18396	-5037	+5826	+13114	-7288	260
270	270	+20394	+21985	-1591	+12227	+17742	-5515	+4384	+12798	-8414	270
280	280	+19690	+21238	-1548	+11308	+17298	-5990	+4009	+12688	-8679	280
290	290	+18497	+20747	-2250	+11096	+17109	-6013	+4817	+12816	-7999	290
300	300	+17322	+20546	-3224	+11209	+17203	-5994	+5639	+13198	-7559	300
310	310	+16640	+20657	-4017	+11575	+17588	-6013	+6343	+13830	-7487	310
320	320	+16554	+21065	-4511	+12180	+18246	-6066	+7888	+14688	-6800	320
330	330	+17281	+21740	-4459	+13092	+19136	-6044	+9401	+15730	-6329	330
340	340	+18703	+22632	-3929	+14539	+20202	-5663	+11095	+16896	-5801	340
350	350	+20473	+23672	-3199	+16285	+21371	-5086	+12729	+18114	-5385	350



$\lambda$	$y_s$	$y_t^{s-60}$	$y_s - y_t$	$y_s$	$y_t^{s-50}$	$y_s - y_t$	$y_s$	$y_t^{s-40}$	$y_s - y_t$	$\lambda$	$\lambda$
0	-7375	-8326	+ 951	-8814	-8543	- 271	-9492	-8685	- 807	0	0
10	-8533	-9212	+ 679	-9582	-9248	- 334	-9965	-9197	- 768	10	10
20	-9322	-9735	+ 413	-9896	-9560	- 336	-10081	-9303	- 778	20	20
30	-9720	-9915	+ 195	-10019	-9532	- 487	-9873	-9054	- 819	30	30
40	-9946	-9790	- 156	-10043	-9203	- 840	-9485	-8523	- 962	40	40
50	-10088	-9403	- 685	-9916	-8641	-1275	-8926	-7789	-1137	50	50
60	-10159	-8807	-1352	-9604	-7915	-1689	-8281	-6935	-1346	60	60
70	-10185	-8046	-2139	-9219	-7075	-2144	-7776	-6028	-1748	70	70
80	-10074	-7163	-2911	-8881	-6187	-2694	-7315	-5128	-2192	80	80
90	-9240	-6182	-3058	-8291	-5260	-3031	-6647	-4248	-2399	90	90
100	-7467	-5123	-2344	-7311	-4315	-2996	-5601	-3411	-2190	100	100
110	-5330	-3992	-1338	-5565	-3349	-2216	-4016	-2598	-1418	110	110
120	-3255	-2485	- 470	-3145	-2331	- 814	-1778	-1777	- 1	120	120
130	-1412	-1499	+ 87	- 592	-1255	+ 663	+ 309	- 911	+1220	130	130
140	+ 254	- 130	+ 384	+1325	- 95	+1420	+2192	+ 41	+2151	140	140
150	+2047	+1317	+ 730	+3221	+1168	+2053	+3976	+1106	+2870	150	150
160	+ 3681	+2829	+ 852	+4768	+2522	+2246	+5164	+2297	+2867	160	160
170	+ 4829	+4376	+ 453	+5778	+3966	+1812	+6109	+3603	+2506	170	170
180	+ 5320	+5910	- 590	+6025	+ 5439	+ 586	+6314	+4985	+1329	180	180
190	+5476	+7374	-1898	+5935	+6888	- 953	+6070	+6383	- 313	190	190
200	+5619	+8749	-3130	+5831	+8238	-2407	+5841	+7715	-1874	200	200
210	+5907	+9803	-3896	+5841	+9388	-3547	+5642	+8882	-3240	210	210
220	+6403	+10616	-4213	+6037	+10265	-4228	+5603	+9789	-4186	220	220
230	+7271	+11069	-3798	+6465	+10783	-4318	+5843	+10339	-4496	230	230
240	+8460	+11111	-2651	+7321	+10875	-3554	+6380	+10463	-4083	240	240
250	+9837	+10710	- 873	+8626	+10509	-1883	+7351	+10108	-2757	250	250
260	+11296	+9865	+1431	+10089	+10109	- 20	+8597	+9261	- 664	260	260
270	+12349	+8598	+3751	+11107	+ 8364	+2743	+9713	+7948	+1765	270	270
280	+12245	+6961	+5284	+10999	+6675	+4324	+9597	+6225	+3372	280	280
290	+10757	+5028	+5723	+9528	+ 4671	+4857	+7970	+4186	+3784	290	290
300	+8224	+2897	+5327	+6917	+2475	+4442	+5310	+1949	+3361	300	300
310	+5343	+ 673	+4670	+3580	+ 193	+3387	+1980	- 355	+2335	310	310
320	+ 2038	-1536	+3574	+ 226	-2047	+2273	-1348	-2591	+1243	320	320
330	- 992	-3621	+2629	-2857	-4128	+1271	-4801	-4634	+ 333	330	330
340	-3607	-5493	+1892	-5538	-5956	+ 418	-6742	-6377	- 365	340	340
350	-5697	-7078	+1381	-7504	-7438	- 66	-8458	-7741	- 717	350	350



$\lambda$	$\lambda$	$y_s$	$y_t$	$y_s - y_t$	$y_s$	$y_t$	$y_s - y_t$	$y_t$	$y_s$	$y_s - y_t$	$\lambda$
0	0	-10217	-8746	-1471	-10634	-8724	-1910	-8620	-10362	+1742	0
10	10	-10200	-9059	-1141	-9670	-8839	-831	-8543	-9033	+490	10
20	20	-9720	-8955	-765	-8576	-8530	-46	-8044	-7625	-419	20
30	30	-9057	-8496	-555	-7546	-7874	+8	-7207	-6370	-837	30
40	40	-8222	-7771	-451	-6485	-6969	+484	-6142	-5188	-954	40
50	50	-7130	-6875	-255	-5381	-5922	+541	-4963	-3986	-977	50
60	60	-6093	-5899	-194	-4131	-4836	+705	-3782	-2880	-902	60
70	70	-5431	-4924	-507	-3435	-3800	+365	-2690	-2011	-679	70
80	80	-5046	-4008	-1038	-2851	-2873	+22	-1754	-1173	-581	80
90	90	-4442	-3187	-1261	-2123	-2088	-35	-1004	-312	-692	90
100	100	-3399	-2446	-953	-1454	-1445	-9	-438	+428	-866	100
110	110	-2206	-1780	-426	-498	-912	+414	-22	+1029	-1051	110
120	120	-584	-1141	+557	+480	-440	+920	+302	+1157	-855	120
130	130	+957	-477	+1434	+1404	+34	+1370	+607	+1567	-960	130
140	140	+2758	+267	+2491	+2954	+579	+2375	+968	+2722	-1754	140
150	150	+4400	+1132	+3268	+4402	+1246	+3156	+1447	+3988	-2541	150
160	160	+5488	+2145	+3343	+5530	+2074	+3456	+2086	+5125	-3039	160
170	170	+6177	+3299	+2878	+5945	+3061	+2884	+2899	+5843	-2944	170
180	180	+6249	+4564	+1685	+5931	+4186	+1745	+3864	+5840	-1976	180
190	190	+5913	+5879	+034	+5623	+5389	+234	+4925	+5354	-429	190
200	200	+5585	+7159	-1574	+5189	+6582	-1393	+6002	+4663	+1339	200
210	210	+5293	+8302	-3009	+4735	+7664	-2929	+6987	+3760	+3227	210
220	220	+5141	+9203	-4062	+4454	+8523	-4069	+7770	+3327	+4443	220
230	230	+5232	+9759	-4527	+4482	+9052	-4570	+8243	+3398	+4845	230
240	240	+5615	+9889	-4274	+4857	+9166	-4309	+8318	+3884	+4434	240
250	250	+6296	+9536	-3240	+5604	+8804	-3200	+7936	+4721	+3215	250
260	260	+7276	+8688	-1412	+6434	+7957	-1517	+7076	+5689	+1387	260
270	270	+8031	+7363	+668	+7091	+6626	+465	+5760	+6386	-626	270
280	280	+8043	+5626	+2417	+6732	+4895	+1837	+4056	+5684	-1628	280
290	290	+6501	+3576	+2925	+5047	+2860	+2187	+2064	+3957	-1893	290
300	300	+3881	+1335	+2546	+2815	+650	+2165	-82	+1945	-2027	300
310	310	+872	-955	+1827	0	-1588	+1588	-2235	-707	-1534	310
320	320	-2996	-3157	+155	-3645	-3709	+064	-4248	-4405	+157	320
330	330	-5507	-5122	-379	-6760	-5576	-1184	-5983	-7873	+1890	330
340	340	-7731	-6757	-974	-8910	-7078	-1832	-7332	-10071	+2739	340
350	350	-9370	-7979	-1391	-10479	-8139	-2340	-8221	-11191	+2970	350



$\lambda$	$y_s$	$y_t$	$y_s - y_t$	$y_s$	$y_t^0$	$y_s - y_t$	$y_s$	$y_t$	$y_s - y_t$
0				-9800	-8438	-1362			
10				-8425	-8121	-244			
20				-6946	-7510	+564			
30				-5497	-6517	+1020			
40				-4215	-5315	+1100			
50				-2868	-4028	+1160			
60				-1804	-2767	+963			
70				-892	-1631	+739			
80				+21	-685	+706			
90				+905	+38	+867			
100				+1553	+541	+1012			
110				+1665	+863	+802			
120				+1459	+1065	+394			
130				+1286	+1224	+62			
140				+2113	+1421	+692			
150				+3426	+1723	+1703			
160				+4664	+2184	+2480			
170				+5551	+2817	+2734			
180				+5659	+3608	+2051			
190				+5014	+4509	+505			
200				+4168	+5436	-1268			
210				+3117	+6293	-3176			
220				+2850	+6969	-4119			
230				+2890	+7358	-4468			
240				+3193	+7375	-4182			
250				+4062	+6957	-2895			
260				+4831	+6089	-1258			
270				+5306	+4792	+514			
280				+4395	+3131	+1264			
290				+2762	+1211	+1551			
300				+1064	-841	+1905			
310				-1308	-2878	+1570			
320				-4880	-4757	-129			
330				-8607	-6331	-2270			
340				-10672	-7510	-3162			
350				-10821	-8221	-2600			

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$\lambda$	$Y_s$	$Y_t$	$Y_s^{q=+10} - Y_t$	$Y_s$	$Y_t$	$Y_s^{q=+20} - Y_t$	$Y_s$	$Y_t$	$Y_s^{q=+30} - Y_t$	$\lambda$	$\lambda$
0	-8920	-8182	+738	-7680	-7860	+180	-6725	-7482	+757	0	0
10	-7717	-7763	+46	-6539	-7300	+761	-5519	-6809	+1290	10	10
20	-6224	-6944	+720	-5191	-6364	+1173	-4262	-5787	+1525	20	20
30	-4663	-5822	+1159	-3803	-5146	+1343	-2914	-4507	+1593	30	30
40	-3377	-4514	+1137	-2445	-3761	+1316	-1373	-3081	+1708	40	40
50	-1984	-3142	+1158	-1060	-2333	+1273	-112	-1626	+1584	50	50
60	-924	-1820	+896	-210	-975	+765	+823	-252	+1075	60	60
70	-105	-657	+546	+595	+217	+378	+1637	+949	+688	70	70
80	+819	+302	+517	+1416	+1177	+239	+2255	+1914	+341	80	80
90	+1585	+1006	+579	+1937	+1872	+65	+2604	+2609	-5	90	90
100	+2076	+1466	+610	+2171	+2305	-134	+1893	+3036	-1143	100	100
110	+1729	+1717	+12	+1135	+2513	-1378	+395	+3229	-2834	110	110
120	+992	+1824	-832	+105	+2557	-2452	-1017	+3242	-4259	120	120
130	+564	+1866	-1302	-513	+2513	-3026	-1887	+3146	-5033	130	130
140	+1168	+1924	-756	+50	+2463	-2413	-1303	+3021	-4324	140	140
150	+2497	+2072	+425	+1378	+2478	-1100	-197	+2933	-3130	150	150
160	+4005	+2362	+1643	+3108	+2616	+492	+2168	+2937	-769	160	160
170	+5047	+2817	+2230	+4630	+2898	+1732	+4040	+3059	+981	170	170
180	+5417	+3426	+1991	+5216	+3322	+1894	+5187	+3300	+1887	180	180
190	+4844	+4145	+699	+5058	+3850	+1208	+5511	+3629	+1882	190	190
200	+4225	+4902	-677	+4701	+4416	+285	+5638	+3991	+1647	200	200
210	+3674	+5602	-1928	+4581	+4936	-355	+5815	+4313	+1502	210	210
220	+3365	+6142	-2777	+4719	+5315	-596	+6114	+4513	+1601	220	220
230	+3465	+6422	-2957	+4980	+5463	-483	+6456	+4510	+1946	230	230
240	+3943	+6358	-2415	+5270	+5305	-035	+6583	+4242	+2341	240	240
250	+4379	+5897	-1518	+5249	+4787	+462	+6154	+3663	+2491	250	250
260	+4464	+5020	-556	+4560	+3907	+659	+4860	+2766	+2094	260	260
270	+4156	+3750	+406	+3503	+2666	+837	+2917	+1573	+1344	270	270
280	+2989	+2152	+837	+1872	+1145	+727	+677	+144	+533	280	280
290	+1579	+325	+1254	+196	-565	+761	-1624	-1433	-191	290	290
300	+134	-1604	+1738	-1714	-2347	+633	-3771	-3048	-723	300	300
310	-2209	-3494	+1285	-3808	-4067	+159	-5757	-4578	-1179	310	310
320	-5535	-5204	-331	-6594	-5593	-1001	-7508	-5905	-1603	320	320
330	-8879	-6608	-2271	-8907	-6808	-2093	-8525	-6923	-1602	330	330
340	-10307	-7608	-2693	-9305	-7620	-1685	-8505	-7549	-956	340	340
350	-9888	-8139	-1749	-8601	-7976	-625	-7826	-7739	-87	350	350



$\lambda$	$\lambda$	$y_s$	$y_t$	$y_s - y_t$	$y_s$	$y_t$	$y_s - y_t$	$y_s$	$y_t$	$y_s - y_t$	$\lambda$
0	0	-6133	-7061	+ 928	-5643	-6607	+ 964	-5129	-6136	+1007	0
10	10	-4921	-6306	+1385	-4298	-5807	+1503	-3611	-5314	+1703	10
20	20	-3473	-5231	+1758	-2633	-4712	+2079	-2031	-4247	+2216	20
30	30	-1931	-3927	+1996	-1008	-3421	+2413	-240	-3006	+2766	30
40	40	-307	-2495	+2188	+632	-2018	+2650	+1415	-1668	+253	40
50	50	+1087	-1045	+ 42	+2109	-607	+2710	+2860	-316	+3176	50
60	60	+2255	+322	+1933	+3227	+734	+2493	+3794	+971	+2823	60
70	70	+2909	+1521	+1388	+3794	+1917	+1877	+4170	+2124	+2046	70
80	80	+3260	+2488	+772	+3808	+2885	+923	+4035	+3091	+0944	80
90	90	+2940	+3194	-254	+2940	+3610	-670	+3037	+3844	-807	90
100	100	+1562	+3636	-2074	+1438	+4085	-2647	+1699	+4371	-2672	100
110	110	-182	+3839	-4021	-191	+4329	-4520	+406	+4680	-4274	110
120	120	-1773	+3856	-5629	-1600	+4382	-5982	-656	+4803	-5459	120
130	130	-2794	+3747	-6541	-2733	+4295	-7028	-1521	+4774	-6295	130
140	140	-2624	+3587	-6205	-3052	+4124	-7176	-1815	+4636	-6451	140
150	150	-893	+3421	-4314	-1566	+3927	-5493	-1056	+4434	-5490	150
160	160	+1205	+3317	-2112	+445	+3742	-3297	+407	+4207	-3800	160
170	170	+3365	+3296	+69	+2705	+3599	-894	+2124	+3960	-1836	170
180	180	+5041	+3361	+1680	+4739	+3503	+1236	+3865	+3720	+145	180
190	190	+5838	+3492	+2346	+6129	+3441	+2688	+5399	+3476	+1923	190
200	200	+6387	+3643	+2744	+7197	+3380	+3817	+5882	+3211	+2671	200
210	210	+6975	+3755	+3220	+7906	+3277	+4629	+7000	+2894	+4106	210
220	220	+7443	+3761	+3682	+8171	+3080	+5091	+7200	+2494	+4706	220
230	230	+7578	+3595	+3983	+7883	+2743	+5140	+6944	+1982	+4962	230
240	240	+7250	+3206	+4044	+7176	+2226	+4950	+6104	+1333	+4771	240
250	250	+6406	+2559	+3847	+5871	+1507	+4364	+4441	+540	+3901	250
260	260	+4698	+1650	+3048	+3768	+587	+3181	+2121	-389	+2610	260
270	270	+2084	+506	+1578	+748	-506	+1254	-636	-1428	+792	270
280	280	-630	-822	+192	-2096	-1725	-371	-2603	-2533	-070	280
290	290	-3362	-2257	-1111	-4825	-2997	-1828	-5257	-3644	-1613	290
300	300	-5517	-3684	-1833	-6780	-4238	-2542	-7218	-4691	-2527	300
310	310	-6995	-5013	-1982	-8105	-5357	-2748	-8325	-5600	-2725	310
320	320	-7848	-6131	-1717	-8635	-6266	-2369	-8709	-6302	-2407	320
330	330	-8366	-6949	-1417	-8665	-6887	-1778	-8539	-6738	-1801	330
340	340	-8145	-7397	-748	-8114	-7166	-948	-7865	-6865	-1000	340
350	350	-7284	-7434	+150	-6935	-7071	+136	-6626	-6662	+36	350



Ms 5103 / 28

határítások

a

Föld mágnességéről.

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KÖNYVTÁRA



$Z$	$\lambda$	$u = 30^\circ$ $\varphi = +60^\circ$	$u = 40^\circ$ $\varphi = +50^\circ$	$u = 50^\circ$ $\varphi = +40^\circ$	$u = 60^\circ$ $\varphi = +30^\circ$	$u = 70^\circ$ $\varphi = +20^\circ$	$u = 80^\circ$ $\varphi = +10^\circ$	$u = 90^\circ$ $\varphi = 0^\circ$
	$0^\circ$							
	$10^\circ$							
	$20^\circ$							
	$30^\circ$							
	$40^\circ$							
	$50^\circ$							
	$60^\circ$							
	$70^\circ$							
	$80^\circ$							
	$90^\circ$							
	$100^\circ$							
	$110^\circ$							
	$120^\circ$							
	$130^\circ$							
	$140^\circ$							
	$150^\circ$							
	$160^\circ$							
	$170^\circ$							
	$180^\circ$							
	$190^\circ$							
	$200^\circ$							
	$210^\circ$							
	$220^\circ$							
	$230^\circ$					+176	-557	-7145
	$240^\circ$					+396	-058	-5164
	$250^\circ$					+804	+565	-0139
	$260^\circ$					+789	+595	+053
	$270^\circ$					+204	+362	+195
	$280^\circ$					-212	+072	-047
	$290^\circ$					-1108	-752	-595
	$300^\circ$					-939	-1025	-737
	$310^\circ$					-1212	+100	+067
	$320^\circ$					+309	+604	+330
	$330^\circ$					+945	+778	+500
	$340^\circ$							
	$350^\circ$							



$\mu = 80^\circ$ $\varphi = +10^\circ$	$\mu = 90^\circ$ $\varphi = 0^\circ$	$\mu = 100^\circ$ $\varphi = -10^\circ$	$\mu = 110^\circ$ $\varphi = -20^\circ$	$\mu = 120^\circ$ $\varphi = -30^\circ$	$\mu = 130^\circ$ $\varphi = -40^\circ$	$\mu = 140^\circ$ $\varphi = -50^\circ$	$\mu = 150^\circ$ $\varphi = -60^\circ$



$\downarrow$	$u = 30^\circ$ $\varphi = +60^\circ$	$u = 40^\circ$ $\varphi = +50^\circ$	$u = 50^\circ$ $\varphi = +40^\circ$	$u = 60^\circ$ $\varphi = +30^\circ$	$u = 70^\circ$ $\varphi = +20^\circ$	$u = 80^\circ$ $\varphi = +10^\circ$	$u = 90^\circ$ $\varphi = 0^\circ$
$0^\circ$							
$10^\circ$							
$20^\circ$							
$30^\circ$							
$40^\circ$							
$50^\circ$							
$60^\circ$							
$70^\circ$							
$80^\circ$							
$90^\circ$							
$100^\circ$							
$110^\circ$							
$120^\circ$							
$130^\circ$							
$140^\circ$							
$150^\circ$							
$160^\circ$							
$170^\circ$							
$180^\circ$							
$190^\circ$							
$200^\circ$							
$210^\circ$							
$220^\circ$							
$230^\circ$					+ 277.89	+ 152.95	+ 25.00
$240^\circ$					+ 293.97	+ 160.95	+ 30.40
$250^\circ$					+ 311.78	+ 171.79	+ 37.90
$260^\circ$					+ 332.04	+ 187.66	+ 51.00
$270^\circ$					+ 353.44	+ 208.66	+ 71.00
$280^\circ$					+ 372.54	+ 232.09	+ 95.90
$290^\circ$					+ 384.60	+ 252.84	+ 121.00
$300^\circ$					+ 385.11	+ 264.73	+ 140.00
$310^\circ$					+ 371.31	+ 262.48	+ 147.00
$320^\circ$					+ 343.36	+ 243.47	+ 137.00
$330^\circ$					+ 304.37	+ 208.73	+ 109.00
$340^\circ$							
$350^\circ$							



$\mu = 0^\circ$ $\varphi = 10^\circ$	$\mu = 90^\circ$ $\varphi = 0^\circ$	$\mu = 100^\circ$ $\varphi = +10^\circ$	$\mu = 110^\circ$ $\varphi = +20^\circ$	$\mu = 120^\circ$ $\varphi = +30^\circ$	$\mu = 130^\circ$ $\varphi = +40^\circ$	$\mu = 140^\circ$ $\varphi = +50^\circ$	$\mu = 150^\circ$ $\varphi = +60^\circ$
95	+ 25 74	- 97 44	- 213 82	- 323 72	- 427 60	- 522 10	- 598 36
95	+ 30 43	- 91 28	- 204 18	- 311 47	- 414 57	- 509 34	- 586 13
179	+ 37 91	- 82 00	- 189 64	- 291 59	- 391 86	- 487 00	- 566 62
766	+ 51 09	- 66 89	- 168 27	- 262 89	- 358 77	- 454 63	- 539 60
866	+ 71 02	- 45 02	- 140 24	- 226 95	- 317 66	- 414 45	- 506 57
209	+ 95 96	- 17 99	- 108 13	- 187 72	- 273 25	- 370 73	- 470 39
284	+ 121 28	+ 9 99	- 76 45	- 150 58	- 231 39	- 328 68	- 434 65
473	+ 140 52	+ 32 97	- 50 70	- 121 02	- 197 60	- 293 22	- 402 83
248	+ 147 27	+ 44 84	- 36 10	- 103 49	- 175 94	- 267 97	- 377 69
347	+ 137 17	+ 41 07	- 36 26	- 100 56	- 168 39	- 254 77	- 360 89
873	+ 109 46	+ 20 10	- 52 36	- 112 57	- 174 81	- 253 64	- 352 86



2

$$2b = x$$

$$\frac{3}{2}c = y$$

$$-2b \cos \varphi - \frac{3}{2}c \sin 2\varphi = M_1$$

$$h = -2.0,5000x - 0,8660y + 3250 = -1044$$

$$-2.0,5736x - 0,9397y + 4540 = -492$$

$$-2.0,6428x - 0,9848y + 5800 = +29$$

$$-2.0,7071x - 1,0000y + 6590 = +79$$

$$-2.0,7660x - 0,9848y + 6950 = -295$$

$$-2.0,8192x - 0,9397y + 7510 = -460$$

$$-2.0,8660x - 0,8660y + 8430 = -243$$

$$-2.0,9063x - 0,7660y + 9450 = +100$$

$$-2.0,9397x - 0,6561y + 10230 = +266$$

$$-2.0,9659x - 0,5000y + 10810 = +229$$

$$-2.0,9848x - 0,3420y + 11040 = -75$$

$$-2.0,9962x - 0,1736y + 11280 = -301$$

$$-2.1,0000x - 0 + 11660 = -304$$

$$-2.0,9962x + 0,1736y + 12280 = +23$$

$$-2.0,9848x + 0,3420y + 12810 = +361$$

$$-2.0,9659x + 0,5000y + 13450 = +919$$

$$-2.0,9397x + 0,6428y + 13850 = +1328$$

$$-2.0,9063x + 0,7660y + 13590 = +1254$$

$$-2.0,8660x + 0,8660y + 13180 = +1131$$

$$-2.0,8192x + 0,9397y + 12130 = +498$$

$$-2.0,7660x + 0,9848y + 11150 = +67$$

$$-2.0,7071x + 1,0000y + 10680 = +271$$

$$-2.0,6428x + 0,9848y + 9140 = -469$$

$$-2.0,5736x + 0,9397y + 6230 = -2264$$

$$-2.0,5000x + 0,8660y + 2710 = -3960$$

$$[aa] = +17,499248$$

$$[ab] = 0 \quad \text{ang } 2482$$

$$[ad] = -205757,8430$$

$$[bn] = 0$$

$$[bb] = +15,239940$$

$$[bl] = +29695,9910$$

$$b = +5982$$

$$c = -1299$$

$$\sum_{n=1}^{n=12} \sin^2 10n = 7,619970$$

$$\sum_{n=1}^{n=12} \cos^2 n5 = 8,099624$$



y.

$$\sum_{n=0}^{n=12} \sin^2 n 5^\circ = 3,900275$$

$$(-b) + \frac{y}{\sin \varphi} = l,$$

+60 (90)	$h = x + 0,8660 y + 4350 = -1421 + 954 = -467$
55 (85)	$x + 0,8792 y + 4620 = -1151 + 903 = -248$
50 (90)	$x + 0,7660 y + 4780 = -991 + 844 = -147$
45 (45)	$x + 0,7071 y + 4850 = -921 + 779 = -142$
40 (50)	$x + 0,6428 y + 4920 = -851 + 708 = -143$
35 (55)	$x + 0,5736 y + 5050 = -727 + 632 = -89$
30 (60)	$x + 0,5000 y + 5180 = -591 + 551 = -40$
25 (65)	$x + 0,4226 y + 5300 = -471 + 466 = -5$
20 (70)	$x + 0,3420 y + 5400 = -371 + 377 = +6$
15 (75)	$x + 0,2588 y + 5520 = -241 + 285 = +44$
10 (80)	$x + 0,1736 y + 5670 = -101 + 191 = +90$
5 (85)	$x + 0,0872 y + 5850 = +79 + 96 = +175$
0 (90)	$x \quad \quad \quad + 6010 = +239 \quad 0 \quad +239$
-5 (95)	$x + 0,0872 y + 6170 = +399 - 96 = +303$
-10 (100)	$x - 0,1736 y + 6370 = +599 - 191 = +408$
15 (105)	$x - 0,2588 y + 6520 = +749 - 285 = +464$
20 (110)	$x - 0,3420 y + 6670 = +899 - 277 = +522$
25 (115)	$x - 0,4226 y + 6770 = +999 - 466 = +533$
30 (120)	$x - 0,5000 y + 6820 = +1049 - 551 = +498$
35 (125)	$x - 0,5736 y + 6780 = +1009 - 632 = +377$
40 (130)	$x - 0,6428 y + 6690 = +919 - 708 = +211$
45 (135)	$x - 0,7071 y + 6520 = +749 - 779 = -30$
50 (140)	$x - 0,7660 y + 6230 = +459 - 844 = -385$
55 (145)	$x - 0,8192 y + 5820 = +39 - 903 = -864$
60 150	$x - 0,8660 y + 5290 = -381 - 954 = -1335$

$$aa = +25,0000$$

$$ab = 0$$

$$al = +144270$$

$$ba = 0$$

$$bb = +7,800546$$

$$bl = -8594,7116$$

$$b = +5771$$

$$c = -1102$$



X

$$\sum_{n=1}^{n=12} \cos 10n = 4,296973$$

(x) y

$$b \sin y - c \cos y = K_1$$

$$h = +0,8660x + 0,5000y - 5180 = +224$$

$$h = +0,8192x + 0,3420y - 4970 = +344$$

$$+0,7660x + 0,1736y - 4820 = +274$$

$$+0,7071x \quad 0 - 4720 = +222$$

$$+0,6428x - 0,1736y - 4570 = +281$$

$$+0,5736x - 0,3420y - 4410 = +207$$

$$+0,5000x - 0,5000y - 3970 = +366$$

$$+0,4226x - 0,6428y - 3500 = +504$$

$$+0,3420x - 0,7660y - 3030 = +616$$

$$+0,2588x - 0,8660y - 2470 = +710$$

$$+0,1736x - 0,9397y - 1930 = +757$$

$$+0,0872x - 0,9848y - 1630 = +511$$

$$0 - 1,0000y - 1380 = +162$$

$$-0,0872x - 0,9848y - 1100 = -203$$

$$-0,1736x - 0,9397y - 660 = -449$$

$$-0,2588x - 0,8660y - 70 = -580$$

$$-0,3420x - 0,7660y + 570 = -687$$

$$-0,4226x - 0,6428y + 1530 = -492$$

$$-0,5000x - 0,5000y + 2600 = -194$$

$$-0,5736x - 0,3420y + 3760 = +197$$

$$-0,6428x - 0,1736y + 4800 = +485$$

$$-0,7071x \quad 0 + 5730 = +688$$

$$-0,7660x + 0,1736y + 6580 = +850$$

$$-0,8192x + 0,3420y + 7350 = +982$$

$$-0,8660x + 0,5000y + 7710 = +764$$

$$[aa] = +7,800546$$

$$[ab] = 0$$

$$[al] = -55615,9130$$

$$[ba] = 0$$

$$[bb] = +9,793946$$

$$[bl] = +15104,5710$$

$$b = +7130$$

$$e = -1542$$

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



Ms 103/29

# I Formulák

Z jo

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA



	$\varphi = -60$			$\varphi = -40$			$\varphi = -20$			$\varphi = 0$			$\varphi = 20$		
0	+107	0	+107	+70	0	+70	-1	0	-1	-35			+19	0	
10	+95	+16	+111	+59	+18	+77	-24	+12	-12	-44			+23	-12	
20	+86	+32	+118	+46	+36	+82	-24	+24	0	-46			+41	-21	
30	+75	+46	+121	+37	+53	+84	-40	+35	-5	-35			+65	-31	
40	+63	+59	+122	+15	+67	+82	-59	+45	-14	-24			+82	-41	
50	+53	+70	+123	-4	+81	+77	-68	+53	-15	-17			+93	-51	
60	+38	+79	+117	-24	+91	+67	-79	+60	-19	-14			+96	-61	
70	+26	+86	+112	-40	+99	+59	-84	+65	-19	-18			+95	-65	
80	+8	+90	+98	-54	+104	+50	-91	+68	-23	-15			+93	-68	
90	-19	+92	+73	-68	+105	+37	-101	+69	-32	-34			+87	-69	
100	-37	+90	+53	-85	+104	+19	-112	+68	-44	-38			+80	-68	
110	-56	+86	+30	-100	+99	-1	-120	+65	-55	-35			+70	-65	
120	-60	+79	+19	-115	+91	-24	-123	+60	-63	-35			+50	-60	
130	-56	+70	+14	-132	+81	-51	-119	+53	-66	-36			+28	-5	
140	-52	+59	+7	-114	+67	-47	-110	+45	-65	-38			-1	-45	
150	-14 <sup>x</sup>	+46	+32 <sup>x</sup>	-84	+53	-31	-82	+35	-47	-35			-29	-35	
160	-20	+32	+12	-49	+36	-13	-47	+24	-23	-24			-44	-24	
170	-13	+16	+3	-27	+18	-9	-17	+12	-5	-5			-42	-12	
180	-12	0	-12	+1	0	+1	+8	0	+8	+15			-4	0	
190	-9	+16	-25	+20	-18	+2	+29	-12	+17	+21			-32	+12	
200	-10	-32	-42	+32	-36	-4	+35	-24	+11	+17			-2	+24	
210	-14	-46	-60	+40	-53	-13	+34	-35	-1	+4			-2	+35	
220	-21	-59	-80	+39	-67	-28	+17	-45	-28	-15			-35	+45	
230	-33	-70	-103	+27	-81	-54	+1	-53	-52	-39			-4	+53	
240	-23	-79	-102	+15	-91	-76	-17	-60	-77	-61			-57	+61	
250	-31	-86	-117	+4	-99	-95	-32	-65	-97	-76			-42	+65	
260	-25	-90	-115	+4	-104	-100	-40	-68	-108	-90			-44	+68	
270	-2	-92	-94	+3	-105	-102	-40	-69	-109	-91			-41	+69	
280	+27	-90	-63	+30	-104	-74	-38	-68	-106	-82			-37	+68	
290	+64	-86	-22	+67	-99	-38	-18	-65	-83	-69			-21	+65	
300	+97	-79	+18	+88	-91	-3	0	-60	-60	-47			-57	+60	
310	+117	-70	+47	+104	-81	+23	+19	-53	-34	-17			-43 <sup>x</sup>	+53	
320	+134	-59	+75	+109	-67	+42	+33	-45	-12	0			+23	+45	
330	+122	-46	+76	+105	-53	+52	+38	-35	+3	+4			-24 <sup>x</sup>	+35	
340	+115	-32	+83	+93	-36	+57	+36	-24	+12	-7			+2	+24	
350	+112	-16	+96	+80	-18	+62	+19	-17	+5	-24					



$\varphi = +20$			$\varphi = +40$			$\varphi = +60$			
+19	0	+19	+60	0	+60	+7	0	+7	
+23	-12	+11	+80	-18	+62	+21	-16	+5	
+41	-24	+17	+96	-36	+60	+45	-32	+13	
+65	-35	+30	+116	-53	+63	+70	-46	+24	
+82	-45	+37	+138	-67	+71	+94	-59	+35	
+93	-53	+40	+153	-81	+72	+117	-70	+47	
+96	-60	+36	+164	-91	+73	+128	-79	+49	
+95	-65	+30	+171	-99	+72	+135	-86	+49	
+93	-68	+25	+169	-104	+65	+135	-90	+45	
+87	-69	+18	+165	-105	+60	+129	-92	+37	
+80	-68	+12	+156	-104	+52	+121	-90	+31	
+70	-65	+5	+137	-99	+38	+106	-86	+20	
+50	-60	-10	+107	-91	+16	+85	-79	+6	
+28	-53	-27	+65	-81	-16	+59	-70	-11	
-7	-45	-46	+17	-67	-50	+27	-59	-32	
-23	-35	-64	-28	-53	-81	-17	-46	-63	
-41	-24	-68	-63	-36	-99	-52	-32	-84	
-47	-12	-59	-85	-18	-103	-67	-16	-83	
-41	0	-41	-94	0	-94	-78	0	-78	
-32	+12	-20	-94	+18	-76	-75	+16	-59	
-21	+24	-3	-91	+36	-55	-66	+32	-34	
-21	+35	+7	-81	+53	-38	-56	+46	-10	
-35	+45	+10	-68	+67	-1	-49	+59	+10	
-41	+53	+11	-54	+81	+27	-34	+70	+36	
-57	+60	+3	-37	+91	+54	-13	+79	+66	
-47	+65	+18	-13	+99	+86	-9	+86	+77	
-44	+68	+24	+6	+104	+110	-18	+90	+72	
-41	+69	+28	+13	+105	+118	-69 <sup>x</sup>	+92	+23 <sup>x</sup>	
-37	+68	+37	+27	+104	+137	-15 <sup>g.w.</sup>	+90	+75 <sup>g.w.</sup>	
-27	+65	+44	+27	+99	+120	-29	+86	+57	
-5	+60	+55	+8	+91	+99	-16	+79	+63	
-43 <sup>x</sup>	+53	+10 <sup>x</sup>	0	+81	+81	-23	+70	+47	
+23	+45	+68	-11	+67	+56	-28	+59	+31	
-21 <sup>x</sup>	+35	+11 <sup>x</sup>	-7	+53	+52	-24	+46	+22	
+21	+24	+50	+18	+36	+54	-9	+32	+23	
+12	+34	+32	+32	+10	+55	1	+16	+15	



$\lambda$	$\varphi = -60^\circ$		$\varphi = -50^\circ$		$\varphi = -40^\circ$		$\varphi = -30^\circ$		$\varphi = -20^\circ$		$\varphi = -10^\circ$		$\varphi = 0^\circ$	
	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$
$0^\circ$	+ 5	+36	-25	+23	-47	+16	-53	+7	-44	-1	-13	-4	+24	
$10^\circ$	+ 5	+29	-25	+17	-48	+10	-54	+5	-44	+3	-13	+5	+23	
$20^\circ$	+ 4	+20	-27	+10	-48	+4	-53	+1	-43	+6	-16	+6	+21	
$30^\circ$	+ 7	+11	-26	+2	-45	-4	-51	-4	-41	+2	-15	+4	+19	
$40^\circ$	+ 6	+1	-24	-9	-44	-12	-49	-9	-39	-3	-15	-1	+18	
$50^\circ$	+ 6	-12	-25	-19	-42	-20	-46	-14	-36	-8	-13	-6	+16	
$60^\circ$	+ 2	-26	-25	-29	-41	-29	-45	-18	-33	-10	-6	-11	+16	
$70^\circ$	- 3	-39	-25	-40	-41	-37	-42	-25	-32	-18	-4	-16	+17	
$80^\circ$	-13	-51	-29	-50	-41	-45	-42	-33	-28	-24	+4	-19	+18	
$90^\circ$	-19	-55	-30	-56	-39	-49	-39	-38	-21	-25	+10	-17	+21	
$100^\circ$	-19	-53	-31	-58	-38	-48	-35	-35	-13	-24	+14	-15	+23	
$110^\circ$	-22	-42	-29	-50	-34	-41	-28	-29	-9	-19	+16	-10	+25	
$120^\circ$	-27	-35	-27	-36	-31	-26	-21	-17	-2	-10	+15	-8	+20	
$130^\circ$	-26	-29	-27	-20	-24	-12	-12	-7	+5	-4	+13	-4	+19	
$140^\circ$	-22	-25	-23	-12	-19	-1	-8	+7	+9	+10	+10	+6	+10	
$150^\circ$	-15	-20	-17	-4	-17	+9	-5	+17	+9	+19	+5	+18	+1	
$160^\circ$	-8	-16	-10	+1	-11	+11	-3	+19	+9	+25	+1	+26	-6	
$170^\circ$	+1	-18	+1	-1	-2	+9	+4	+17	+13	+21	+7	+27	-3	
$180^\circ$	+9	-27	+9	-11	+7	0	+11	+7	+15	+12	+11	+18	+3	
$190^\circ$	+15	-35	+13	-24	+14	-15	+17	-8	+16	-2	+15	+5	+1	
$200^\circ$	+15	-45	+16	-37	+17	-29	+16	-22	+17	-18	+15	-14	+11	
$210^\circ$	+12	-49	+13	-44	+14	-39	+15	-36	+17	-32	+18	-32	+15	
$220^\circ$	+5	-48	+7	-49	+9	-47	+10	-44	+14	-41	+17	-44	+19	
$230^\circ$	-3	-40	-2	-45	+1	-47	+5	-47	+12	-45	+24	-46	+33	
$240^\circ$	-10	-23	-10	-34	-6	-38	0	-41	+12	-40	+32	-41	+49	
$250^\circ$	-17	-1	-15	-12	-11	-21	-6	-26	+10	-26	+39	-27	+61	
$260^\circ$	-21	+27	-19	+16	-18	+4	-14	-4	+8	-9	+46	-6	+70	
$270^\circ$	-23	+56	-21	+44	-21	+32	-20	+20	+2	+17	+45	+18	+74	
$280^\circ$	-19	+76	-18	+65	-20	+54	-23	+41	-5	+34	+40	+30	+73	
$290^\circ$	-7	+85	-7	+75	-21	+63	-23	+52	-9	+42	+31	+38	+66	
$300^\circ$	+2	+84	-8	+74	-23	+61	-26	+52	-10	+45	+23	+41	+53	
$310^\circ$	+7	+80	-7	+68	-24	+55	-27	+48	-12	+42	+20	+39	+51	
$320^\circ$	+9	+72	-7	+57	-27	+46	-31	+33	-17	+28	+15	+23	+47	
$330^\circ$	+9	+62	-11	+47	-31	+36	-36	+26	-23	+15	+5	+5	+37	
$340^\circ$	+8	+53	-16	+38	-37	+28	-43	+19	-27	+7	-3	-6	+28	
$350^\circ$	+7	+45	-20	+30	-42	+21	-48	+11	-38	-1	-11	-11	+25	



10°	$\varphi=0^\circ$		$\varphi=+10^\circ$		$\varphi=+20^\circ$		$\varphi=+30^\circ$		$\varphi=+40^\circ$		$\varphi=+50^\circ$		$\varphi=+60^\circ$	
$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$	$\xi$	$\eta$
-4	+24	-3	+44	-1	+35	+4	+20	+6	-4	+4	-25	+1	-36	-3
+5	+23	+3	+44	+3	+36	+5	+19	+8	-5	+4	-26	+2	-37	+2
+6	+21	+5	+45	+2	+39	+4	+21	+5	-5	+4	-28	+5	-34	+4
+4	+19	+4	+41	+1	+38	+1	+22	+1	-4	+4	-27	+6	-35	+8
-1	+18	-1	+43	-4	+41	-3	+26	-2	-2	+2	-25	+4	-34	+10
-6	+16	-5	+34	-7	+44	-8	+30	-6	+2	0	-23	+5	-34	+9
-11	+16	-11	+30	-13	+47	-14	+36	-12	+5	-3	-22	+2	-35	+6
-16	+17	-16	+31	-18	+53	-19	+40	-16	+10	-8	-20	-3	-35	0
-19	+18	-17	+33	-19	+56	-20	+42	-17	+12	-13	-15	-11	-31	-9
-17	+21	-15	+33	-16	+49	-20	+41	-20	+17	-21	-9	-23	-26	-23
-15	+23	-11	+31	-14	+41	-18	+40	-25	+21	-34	-1	-39	-16	-38
-10	+25	-10	+23	-16	+33	-28	+36	-40	+23	-49	+5	-53	-6	-48
-8	+20	-10	+16	-20	+23	-33	+30	-48	+24	-62	+13	-62	+4	-57
-4	+19	-9	+9	-19	+12	-34	+20	-52	+25	-65	+21	-67	+13	-59
+6	+10	0	0	-10	+2	-24	+11	-39	+25	-57	+26	-65	+23	-56
+18	+1	+13	-7	+5	-7	-17	+4	-24	+22	-34	+33	-44	+31	-43
+26	-6	+25	-13	+20	-17	+11	-3	+2	+17	-9	+35	-19	+37	-22
+27	-3	+29	-21	+28	-23	+26	-11	+21	+9	+15	+32	+8	+38	-1
+18	+3	+24	-13	+26	-22	+29	-18	+33	-1	+33	+28	+30	+37	+21
+5	+1	+9	-7	+14	-19	+23	-20	+32	-4	+39	+22	+46	+31	+40
-14	+11	-8	+1	0	-11	+13	-14	+28	-2	+43	+20	+55	+25	+47
-32	+15	-30	+8	-13	+1	+5	-2	+26	+6	+47	+17	+63	+21	+60
-44	+19	-38	+22	-22	+17	+2	+14	+25	+13	+49	+13	+66	+2	+64
-46	+33	-41	+38	-24	+38	+3	+31	+28	+20	+51	+6	+65	-11	+65
-41	+49	-37	+60	-19	+60	+7	+46	+32	+26	+51	+2	+62	-24	+61
-27	+61	-24	+83	-9	+79	+11	+58	+34	+24	+47	-5	+54	-37	+50
-6	+70	-5	+93	+2	+91	+14	+69	+29	+33	+39	-10	+41	-47	+34
+18	+74	+15	+96	+14	+93	+16	+78	+21	+31	+23	-17	+19	-58	+17
+30	+73	+25	+92	+19	+99	+17	+80	+13	+31	+10	-23	+2	-61	+5
+38	+66	+31	+81	+27	+92	+19	+77	+8	+23	-5	-24	-11	-57	-13
+41	+53	+38	+73	+33	+81	+19	+73	+2	+10	-11	-26	-22	-53	-22
+39	+51	+35	+71	+29	+66	+15	+35	-3	-1	-13	-27	-23	-55	-27
+23	+47	+18	+64	+13	+50	+3	+22	-7	-10	-11	-31	-22	-48	-15
+5	+37	-3	+50	-7	+38	+10	+14	-9	-12	-11	-34	-19	-44	-21
-6	+28	-13	+43	-13	+34	+7	+15	-5	-10	-6	-31	-12	-39	-17
-11	+25	-11	+43	-7	+34	0	+18	+1	-7	0	-28	-4	-36	-8

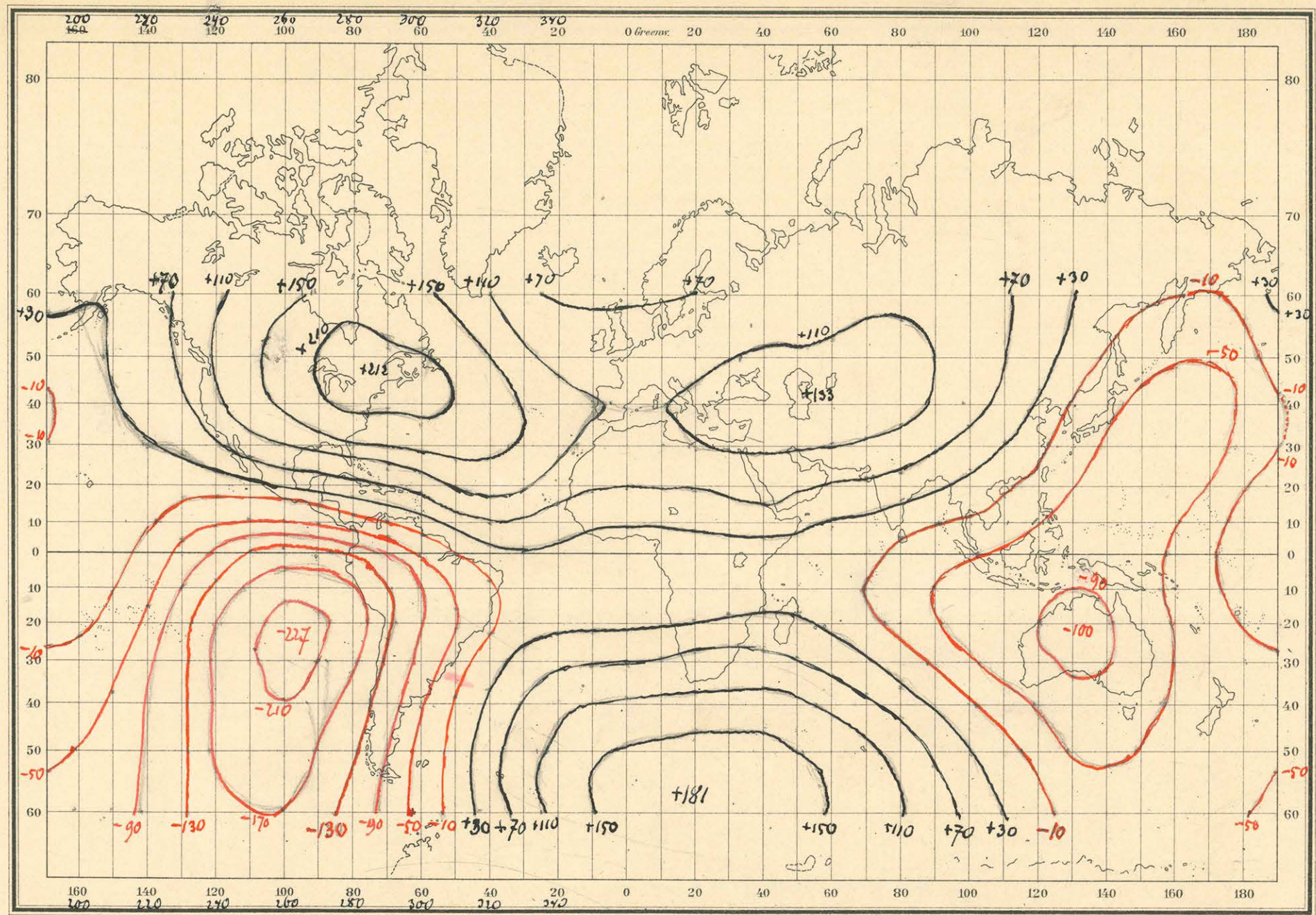


$\lambda$	$\varphi = -60^\circ$	$\varphi = -50^\circ$	$\varphi = -40^\circ$	$\varphi = -30^\circ$	$\varphi = -20^\circ$	$\varphi = -10^\circ$	$\varphi = 0^\circ$
$0^\circ$	+167,5	+157,5	+121,5	+71,5	+23	-5,5	0
$10^\circ$	+171	+161	+124,5	+73,5	+24,5	-4	+1
$20^\circ$	+180,5	+169	+131,5	+81	+33	+3,5	+6
$30^\circ$	+177	+167,5	+132	+84	+38	+10	+12
$40^\circ$	+174	+165	+131	+84,5	+40,5	+13,5	+15
$50^\circ$	+164	+154,5	+121	+77	+36	+11,5	+13
$60^\circ$	+147	+135,5	+102,5	+59,5	+20,5	+1	+6
$70^\circ$	+131	+117	+84	+42,5	+5,5	-12,5	-6
$80^\circ$	+112,5	+91,5	+56,5	+15	-20	-32	-21
$90^\circ$	+92	+57,5	+23	-16	-46	-51,5	-36
$100^\circ$	+53	+28	-6,5	-43	-67	-66,5	-48
$110^\circ$	+25	-0,5	-32	-63	-81,5	-78	-57,5
$120^\circ$	+3	-24	-53	-79	-90,5	-84	-66,5
$130^\circ$	-26,5	-53	-78,5	-96,5	-100	-91	-75
$140^\circ$	-35	-57,5	-78,5	-92	-91,5	-82	-72
$150^\circ$	-32	-48	-65	-76	-74	-67	-64
$160^\circ$	-23	-32	-42,5	-49,5	-46,5	-41,5	-44
$170^\circ$	-38	-37	-37,5	-36,5	-28	-18	-16
$180^\circ$	-47,5	-38,5	-30,5	-21,5	-8,5	+4,5	+11,5
$190^\circ$	-59	-45	-31,5	-16	+0,5	+16	+24,0
$200^\circ$	-68	-52,5	-36	-19,5	-3	+13	+26
$210^\circ$	-82	-69,5	-56	-41,5	-25,5	-8	+8,5
$220^\circ$	-93	-87	-79	-69,5	-57,5	-42	-24
$230^\circ$	-117	-119,5	-120	-117	-108,5	-90,5	-62
$240^\circ$	-167,5	-177,5	-185,5	-188,5	-182,5	-140,5	-100
$250^\circ$	-166	-182	-195	-203,5	-201,5	-179	-129
$260^\circ$	-169,5	-189,5	-208	-224	-227	-200	-142
$270^\circ$	-146,5	-168,5	-189,5	-210	-219	-195,5	-136
$280^\circ$	-116	-134,5	-153,5	-175	-189	-171,5	-115
$290^\circ$	-86	-93	-107	-129	-145	-134	-85,5
$300^\circ$	-33	-36	-51,5	-76	-94	-87,5	-49,5
$310^\circ$	+9	+9	-6,5	-32	-57,5	-47,5	-12
$320^\circ$	+54	+55	+38	+9	-15	-16	+15
$330^\circ$	+96,5	+95,5	+74,5	+41	+11,5	+2,5	+23,5
$340^\circ$	+125,5	+121,5	+95	+55	+20	+5	+17,5
$356^\circ$	+150	+143,5	+112,5	+67,5	+24,5	0	+7,0

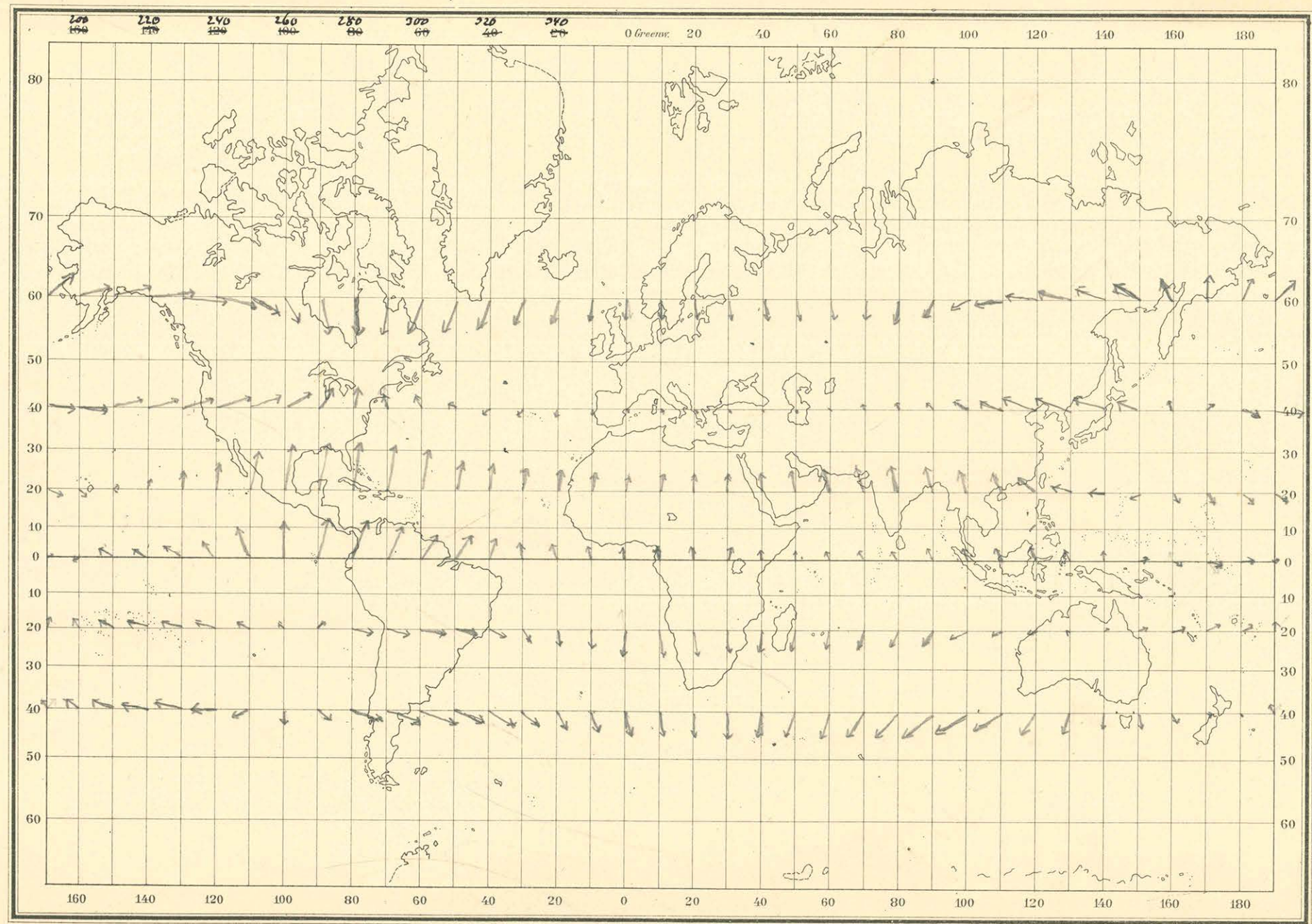


$\varphi = -10^\circ$	$\varphi = 0^\circ$	$\varphi = +10^\circ$	$\varphi = +20^\circ$	$\varphi = +30^\circ$	$\varphi = +40^\circ$	$\varphi = +50^\circ$	$\varphi = +60^\circ$
	0	+34	+73,5	+101	+109	+94,5	+64,0
	+1	+34,5	+74,5	+102	+109	+93,5	+62,0
	+6	+39	+81	+111	+119	+102,5	+71,5
	+12	+42	+87,5	+111,5	+120,5	+105	+74
	+15	+45,5	+87,5	+121	+133	+119,5	+90
	+13	+38	+77	+114	+130	+119,5	+91
	+6	+29	+67,5	+109	+129,5	+121	+92,5
	-6	+18	+60	+106,5	+131,5	+126,5	+99
	-21	+4	+48,5	+97,5	+124,5	+123	+100
	-36	-9	+32	+77	+106	+110	+92,5
	-48	-21	+15	+55,5	+86	+96	+82,5
	-57,5	-33,5	-5,5	+29	+58,5	+72,5	+72
	-66,5	-48,5	-29	-2,5	+24,5	+43	+51,5
	-75	-61	-50,5	-34,5	-12,0	+11	+28
	-72	-67	-66	-59,5	-41,5	-16	+8,5
	-64	-67	-74	-75,5	-62,5	-35	-3
	-44	-53,5	-68,5	-78,5	-71,5	-45,5	-9,5
	-16	-28	-50	-67	-68	-47,5	-12,5
	+11,5	+6,5	-11	-31	-40,5	-27	+5,5
	+24,0	+21	+8	-11,5	-23,5	+14,5	+41
	+26	+32	+27	+14,5	+6,5	+15,5	+38
	+8,5	+20	+24,5	+24	+26	+37,5	+56,5
	-24	-3,5	+16	+31,5	+45	+58	+65,5
	-62	-36,5	+11,5	+36	+61,5	+74,5	+72
	-100	-45,5	+14,5	+67,5	+103,5	+117,5	+106,5
	-129	-57,0	+24	+92,5	+133,5	+143,	+122
	-142	-60,5	+31,5	+111,5	+162,5	+174	+145,5
	-136	-51	+43,5	+129	+183,5	+190,5	+153
	-115	-32,5	+63	+152,5	+208	+212	+170
	-85,5	-12	+74,5	+159	+209	+208,5	+168
	-49,5	+13,5	+90,5	+167,5	+209	+201	+161,5
	-12	+49	+117,5	+168	+185	+171	+130
	+15	+70,5	+127,5	+163,5	+169,5	+149	+109,5
	+23,5	+67	+111	+137	+138	+115	+76
	+17,5	+53	+91,5	+116	+118,5	+98	+63
	+7,0	+41	+79,5	+105,5	+111	+93,5	+61,5











$$\begin{aligned}
 Z &= -2\mu_a \sin \varphi - 2\mu_b \cos \varphi \sin 2l + 2\mu_c \cos \varphi \cos 2l \\
 &\quad - 2h - 2i + 3h \cos^2 \varphi \quad \left( -(2h+i)(1-\frac{3}{2}\cos^2 \varphi) \right) \\
 &\quad - \frac{3}{2}e \sin 2\varphi \sin 2l + \frac{3}{2}g \sin 2\varphi \cos 2l + \frac{3}{2}f \cos^2 \varphi \sin 2l + 3i \cos^2 \varphi \cos 2l \\
 &\quad \left( \frac{3}{2}i \cos^2 \varphi \cos 2l \right) \\
 &\quad + 4(3E - H) \sin \varphi - 20E \sin^3 \varphi \quad \dots \dots \dots I \\
 &\quad + 4\{(4J + 3F) \cos \varphi - 5J \cos^3 \varphi\} \sin 2l \\
 &\quad + 4\{(4K + 3G) \cos \varphi - 5K \cos^3 \varphi\} \cos 2l \\
 &\quad + 20L(\sin \varphi - \sin^3 \varphi) \sin 2l \\
 &\quad + 20M(\sin \varphi - \sin^3 \varphi) \cos 2l \quad \dots \dots \dots II \\
 &\quad - 20F \cos^3 \varphi \sin 2l \\
 &\quad - 20G \cos^3 \varphi \cos 2l
 \end{aligned}$$

$$\begin{aligned}
 I+II &= (2E+H)(6\sin \varphi - 10\sin^3 \varphi) \\
 &\quad + 10H(\sin \varphi - \sin^3 \varphi) \cos 2l
 \end{aligned}$$

$\varphi$	$1 - \frac{3}{2}\cos^2 \varphi$
0	$= -\frac{1}{2}$
20°	$= -0,226$
40°	$= +0,120$
60°	$= +0,625$

$$\frac{\sqrt{a}}{r^3} = \mu_a \quad \frac{\sqrt{b}}{r^3} = \mu_b \quad \frac{\sqrt{c}}{r^3} = \mu_c$$

$$e = 3 \frac{\sqrt{c}}{r^4} (\beta a_0 + \alpha b_0)$$

$$f = 3 \frac{\sqrt{c}}{r^4} (\gamma b_0 + \beta c_0)$$

$$g = 3 \frac{\sqrt{c}}{r^4} (\alpha c_0 + \gamma a_0)$$

$$h = 3 \frac{\sqrt{c}}{r^4} (\alpha a_0 - \beta b_0)$$

$$i = 3 \frac{\sqrt{c}}{r^4} (\beta b_0 - \gamma c_0)$$

$$E = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\alpha(A^2 - B^2) - 2\beta AB)$$

$$F = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\beta(B^2 - C^2) - 2\gamma BC)$$

$$G = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\gamma(B^2 - C^2) + 2\beta BC)$$

$$H = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\alpha(B^2 - C^2) + 2\beta AB - 2\gamma CA)$$

$$J = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\beta(C^2 - A^2) + 2\gamma BC - 2\alpha AB)$$

$$K = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\gamma(A^2 - B^2) + 2\alpha CA - 2\beta BC)$$

$$L = \frac{3}{2} \frac{\sqrt{c}}{r^5} (\gamma AB + \alpha BC + \beta CA)$$

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$$\underline{J_{\text{mnd}}.} \quad \gamma = +2,557$$

$$\beta = +5,893$$

$$\sum X_{\text{h}} \alpha = -31,65$$

$$\{(2-2')L\} \quad \alpha = -22,78$$

$$\sum X_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\beta a_0 + \alpha b_0) = +0,219$$

$$\sum X_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\beta a_0 + \alpha b_0) = -0,274$$

$$\sum X_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\gamma a_0 + \alpha c_0) = -1,917$$

$$\sum X_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\gamma a_0 + \alpha c_0) = -1,989$$

$$\sum Y_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\beta b_0 - \gamma c_0) = -0,386$$

$$\sum Y_{\text{mnd}} \text{ h} \quad \frac{1}{r}(\gamma b_0 + \beta c_0) = -0,600$$

$$\sum Z \text{ h} \quad 2 \frac{1}{r}(\alpha a_0 - \beta b_0) + \frac{1}{r}(\beta b_0 - \gamma c_0) = +0,087$$

$$\sum Z_{\text{mnd}} \quad \frac{1}{r}(\gamma b_0 + \beta c_0) = -0,871$$

$$\sum Z_{\text{mnd}} \quad \frac{1}{r}(\beta b_0 - \gamma c_0) = -0,463$$

$$\frac{1}{r}(\beta a_0 + \alpha b_0) = -0,247$$

$$\frac{1}{r}(\gamma a_0 + \alpha c_0) = -1,953$$

$$\frac{1}{r}(\beta b_0 - \gamma c_0) = -0,425$$

$$\frac{1}{r}(\gamma b_0 + \beta c_0) = -0,751$$

$$\frac{1}{r}(\alpha a_0 - \beta b_0) = +0,406$$

$$e = -0,741$$

$$f = -2,253$$

$$g = 5,859$$

$$h = +1,218$$

$$i = -1,275$$

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$$\begin{aligned} Z = & -1,161 + 63,30 \sin \varphi + 3,654 \cos^2 \varphi - (11,786 \cos \varphi - 1,112 \sin^2 \varphi) \underline{\sin d} \\ & + (5,114 \cos \varphi - 8,789 \sin^2 \varphi) \underline{\cos d} - 3,380 \cos^2 \varphi \underline{\sin d} - 8,825 \cos^2 \varphi \underline{\cos d} \end{aligned}$$

$$\varphi = -60 \quad Z = -55,07 - 6,86 \underline{\sin d} + 10,17 \underline{\cos d} - 0,85 \underline{\sin d} - 0,96 \underline{\cos^2 d}$$

$$\varphi = -40 \quad Z = -39,72 - 10,12 \underline{\sin d} + 12,57 \underline{\cos d} - 1,98 \underline{\sin d} - 2,25 \underline{\cos^2 d}$$

$$\varphi = -20 \quad Z = -19,58 - 11,79 \underline{\sin d} + 10,46 \underline{\cos d} - 2,99 \underline{\sin d} - 3,38 \underline{\cos^2 d}$$

$$\varphi = 0 \quad Z = +2,49 - 11,79 \underline{\sin d} + 5,11 \underline{\cos d} - 3,38 \underline{\sin d} - 3,83 \underline{\cos^2 d}$$

$$\varphi = +20 \quad Z = +23,72 - 10,36 \underline{\sin d} - 0,84 \underline{\cos d} - 2,99 \underline{\sin d} - 3,38 \underline{\cos^2 d}$$

$$\varphi = +40 \quad Z = +41,68 - 7,93 \underline{\sin d} - 4,74 \underline{\cos d} - 1,98 \underline{\sin d} - 2,25 \underline{\cos^2 d}$$

$$\varphi = +60 \quad Z = +54,57 - 4,93 \underline{\sin d} - 5,05 \underline{\cos d} - 0,85 \underline{\sin d} - 0,96 \underline{\cos^2 d}$$



$$\mu_a = -318,5$$

$$\mu_b = +59,8$$

$$\mu_g = 24,5$$

$$\sum X_{end} \text{ bit } e_1 = -12,83$$

$$\sum X_{end} \text{ bit } \sum X'_{end} = -16,53$$

$$\sum Z_{end} \text{ bit } \sum Z'_{end} = -16,53$$

$$e_2 = -16,53$$

$$e = \frac{e_1 + e_2}{2} = -14,69 \quad (\text{approx } e = -14,4)$$

$$\sum X_{end} \text{ bit } g_1 = -59,33$$

$$\sum X_{end} \text{ bit } \sum X'_{end} \text{ bit } = -44,56$$

$$\sum Z_{end} \text{ bit } \sum Z'_{end} \text{ bit } = -40,19$$

$$g_2 = -44,08$$

$$g = \frac{g_1 + g_2}{2} = -51,72$$

$$\sum Z \text{ bit } (zh+i)_1 = -1,16$$

$$\sum X - \sum X' \text{ bit } (zh+i)_2 = -16,71$$

$$zh+i = \frac{(zh+i)_1 + (zh+i)_2}{2} = -8,93$$

c. min.

$$\mu_p \frac{a_0}{r} + \mu_a \frac{b_0}{r} = -3,90$$

$$\mu_d \frac{c_0}{r} + \mu_g \frac{a_0}{r} = -17,24$$

$$2\mu_d \frac{a_0}{r} - 2\mu_p \frac{b_0}{r} - \mu_g \frac{c_0}{r} = -2,98$$

$$\frac{a_0}{r} = a \text{ bit}$$

$$59,8 a - 318,5 b = -3,90$$

$$-318,5 c + 24,5 a = -17,24$$

$$-607,0 a - 59,8 b - 24,5 c = -2,98$$

csökkent:

$$\frac{a_0}{r} = +0,00142$$

$$f = +10,64$$

$$\frac{b_0}{r} = +0,0125$$

$$i = -1,54$$

$$\frac{c_0}{r} = +0,0542$$

$$h = -3,60$$



$\sum X$  in  $\sum Z-Z'$  bit

$$\mu_a = -31,815$$

$\sum Y_{\text{ord}}$  in  $\sum Z_{\text{ord}}$  bit

$$\mu_b = +5,893$$

$\sum Y_{\text{ord}}$  in  $\sum Z$  und bit

$$\mu_c = +2,557$$

$\sum Y_{\text{ord}}$  bit  
 $\sum Z_{\text{ord}}$  bit

$$(4K+3G) = -5,9823 \quad 1)$$

$\sum Y_{\text{ord}}$  bit  
 $\sum Z_{\text{ord}}$  bit

$$(4J+2F) = +12,058 \quad 2)$$

$\sum Y_{\text{ord}}$  bit

$$10,87K + 185,43G = +35,40 \quad 3)$$

$\sum Y_{\text{ord}}$  bit

$$10,87J + 185,43F = -32,59 \quad 4)$$

$\sum Z_{\text{ord}}$  bit

$$3,99J + 43,02F = +1,05 \quad 5)$$

$\sum Z_{\text{ord}}$  bit

$$3,99K + 43,02G = -5,73 \quad 6)$$

$(\sum X_{\text{ord}} - X'_{\text{ord}})$  bit  
 $(\sum Y_{\text{ord}} - Y'_{\text{ord}})$  bit

$$(4J+2F) = +0,517$$

$$(4K+3G) = +3,283$$

1 in 3 symmetris

$$K = -1,76$$

$$G = +0,357$$

1 in 6 " "

$$K = -1,50$$

$$G = +0,01$$

2 in 4 bit

$$F = -0,37$$

$$J = +3,29$$

2 in 5 bit

$$F = -0,27$$

$$J = +3,22$$

Werte:

$$F = -0,32$$

$$G = +0,18$$

$$J = +3,26$$

$$K = -1,63$$

$\sum X_{\text{ord}}$  bit

$$L = +0,02$$

$\sum X_{\text{ord}}$  bit

$$H = -1,46$$

$$E = +1,06$$

$\sum X_{\text{ord}}$  bit

$$e = -0,73$$

$\sum Y_{\text{ord}}$  bit

$$f = -2,25$$

$\sum X_{\text{ord}}$  bit

$$g = -5,86$$

$\sum Z$  in  $\sum Y_{\text{ord}}$  bit

$$h = +1,22$$

$\sum Y_{\text{ord}}$  bit

$$i = -1,28$$

$$\sum Y_{\text{ord}} \text{ bit } L = -0,03, \sum Z_{\text{ord}} \text{ bit } L = -0,02$$

$$\sum Y_{\text{ord}} \text{ bit } H = -1,02, \sum Z_{\text{ord}} \text{ bit } H = -1,13$$

Ang  $\sum X$  in  $\sum Z-Z'$  symmetrisch bit  $2E+H = +0,66$  in  $H = -1,46$  bit.



$$\begin{aligned}
X = & -\mu_a \cos \varphi + \mu_b \sin \varphi \underline{\sin d} - \mu_c \sin \varphi \underline{\cos d} \\
& - h \sin 2\varphi - e \cos 2\varphi \underline{\sin d} + g \cos 2\varphi \underline{\cos d} - \frac{1}{2} f \sin 2\varphi \underline{\sin^2 d} - i \sin 2\varphi \underline{\cos^2 d} \\
& - (12E + 4L) \cos \varphi + 15E \cos^3 \varphi \\
& + \{(11J - 3F) \sin \varphi - 15J \sin^3 \varphi\} \underline{\sin d} \\
& + \{(11K - 3G) \sin \varphi - 15K \sin^3 \varphi\} \underline{\cos d} \\
& - 10L (\cos \varphi - \frac{3}{2} \cos^3 \varphi) \underline{\sin^2 d} \\
& - 10L (\cos \varphi - \frac{3}{2} \cos^3 \varphi) \underline{\cos^2 d} \\
& + 15F (\sin \varphi - \sin^3 \varphi) \underline{\sin^2 d} + 15G (\sin \varphi - \sin^3 \varphi) \underline{\cos^2 d}
\end{aligned}$$

---


$$\begin{aligned}
Y = & -\mu_c \underline{\sin d} - \mu_b \underline{\cos d} \\
& - g \sin \varphi \underline{\sin d} - e \sin \varphi \underline{\cos d} - i \cos \varphi \underline{\sin^2 d} + f \cos \varphi \underline{\cos^2 d} \\
& - 5L \sin 2\varphi \\
& - \{(4K + 3G) - 5(K + 3G) \cos^2 \varphi\} \underline{\sin d} \\
& + \{(4J + 3F) - 5(J + 3F) \cos^2 \varphi\} \underline{\cos d} \\
& - \frac{5}{2} L \sin 2\varphi \underline{\sin^2 d} \\
& + 10L \sin 2\varphi \underline{\cos^2 d} \\
& - 15G \cos^2 \varphi \underline{\sin^2 d} \\
& + 15F \cos^2 \varphi \underline{\cos^2 d}
\end{aligned}$$

MAGYAR  
TUDOMÁNYOS AKADÉMIA  
KÖNYVTÁRA

$X, Y, Z$  formulák kiértékelése

$$\frac{\partial X}{\partial \lambda} + Y \sin \varphi = \frac{\partial Y}{\partial \varphi} \cos \varphi \quad \text{invariáns első törvény.}$$